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ORIGINAL LECTURES.

ABSTRACT OF A CLINICAL LECTURE ON A CASE OF EMPHYSEMA OF THE LUNG.

Delivered at the Pennsylvania Hospital

BY JAS. H. HUTCHINSON, M.D.

HISTORY.—Ann McH., æt. 65; born in Ireland; married; washerwoman; admitted September 22, 1881.

She had always been strong and healthy until her present trouble began. She has had nine children, three of whom are living and healthy. Three of the others died accidental deaths.

About two years ago, after getting wet, she caught a heavy cold and had a severe cough, from which she has never since been free. After the cough had lasted a few months, she began having paroxysmal attacks of shortness of breath; these have continued and at times are very severe. She has been unable to do any work for several months. Appetite has become poor and bowels irregular.

Upon admission, patient is anæmic, has a great deal of dyspnoea; sonorous sibilant and mucous râles are heard all over chest; heart is dilated; urine negative. Ordered potass. iod. gr. x t. d.

October 27.—Has had several severe attacks of dyspnoea. Hyoscyamus, ether, and emetics have been tried, but without giving much relief. Ordered fl. ext. jaborandi, gtt. xxx.

October 31.—Jaborandi produced copious sweating and relieved the dyspnoea somewhat.

November 1.—Increased potass. iod. to gr. xxx t. d.

November 6.—Complains of nausea and headache. Reduced iodide to gr. lx a day. Is also taking mist. Bashami, fʒss t. d. Lungs are still full of râles, but she breathes much more easily. Percussion over chest is hyper-resonant. There is a systolic murmur heard over apex of heart.

It will be noticed that we have here the case of a woman, whose previous health had apparently been good, attacked with bronchitis with expectoration, and dyspnoea, increased upon exertion.

November 16.—Physical Examination.—On the breast you notice an eruption, which may without doubt be attributed to the iodide of potassium employed in the present treatment, and which should not mislead you. There is a slight degree of embarrassment of respiration, with not much expansion as compared with the ele-

vation of the chest in the movement of inspiration. The supra- and infra-clavicular spaces are depressed upon deep inspiration. The upper part of the chest is somewhat rounded, and vocal fremitus is still felt, but not well marked. In women it is not so well marked, as a rule, as in men. The inspiration is short, and expiration somewhat prolonged. Percussion is hyper-resonant, non-vesicular, and somewhat tympanitic. Auscultation, inspiration shortened, expiration prolonged. Sibilant, sonorous râles increased more on one side and most marked on expiration; vesicular murmur not increased.

At the time I took charge of the case, the heart-sounds were marked by râles; but now a slight murmur at the apex, systolic in time, is distinctly heard, indicating the existence of mitral regurgitation. Cardiac dulness is decreased, which is due to an interposition of a portion of emphysematous lung. There is no albumen in the urine, but upon the addition of nitric acid the urine became dark,—a change due to the precipitation of iodine, and the formation of nitrate of potassium by the action of the nitric acid upon the iodide of potassium eliminated by the kidneys. The addition of a solution of acetate of lead to the urine produces the characteristic precipitate of iodide of lead.

The other organs interrogated, so to speak, show no sign of disease.

Pathology.—In this case the patient has had bronchitis for two years. Bronchitis, an inflammatory disease of the lungs, long continued, must cause in the first place degeneration, which is augmented by the pressure exerted in the act of coughing. The act of coughing, you remember, is accompanied by the closing of the glottis. The apices of the lungs, as well as their anterior borders, are first affected, the reason for which is evidently the comparatively slight external support to the lungs at these points. Dyspnoea is due to diminished amount of blood exposed to the air from the rupture of septa between the air-cells, thus decreasing the extent of aerating surface. The impaired circulation through the lungs causes a moderate amount of dilatation of the right ventricle, which in turn through the venous and arterial circulation leads to dilatation of the left ventricle and consequent incompetence of the mitral valve.

Treatment.—Arrest at once the bronchitis. In aged persons this is very important. The presence of the emphysema often embarrasses the treatment. In this case, hyoscyamus and the different forms of ether were used to relieve the dyspnoea. Iodide of potassium to the extent of ʒiiss in twenty-four hours has been most relied upon in the treatment. Its use is somewhat empirical, as I can give no reason for the undoubted benefit derived. The debility which usually accompanies emphysema should be met with tonics, as Basham's mixture. When the patient is greatly reduced, cod-liver oil and quinine are indicated. When bronchitis is present, and has proved rebellious to other treatment, oil of turpentine with mucilage of acacia and a few drops of some aromatic oil may often be prescribed with advantage. In a word, the treatment should consist largely of tonics, care being taken that the patient does not take fresh colds.

Prognosis.—In the present case it is not probable that we shall be able to restore the patient to complete health; but we may make her comfortable for the rest of her days.

ORIGINAL COMMUNICATIONS.

AN EXPERIMENTAL RESEARCH ON TUBERCULOSIS.*

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THE present paper is a brief account of a research extending over two years of continued work, and which will be published as a monograph in complete form, with all the tables of experiments, illustrations, and literature, at a later date.

The whole work has been done in the Pathological Laboratory of the University of Pennsylvania, under the guidance of Dr. Henry F. Formad.

The object of research was to determine the true nature of tuberculosis and its products. Here the following questions presented themselves:

1. Whether tuberculosis is a true infectious disease which can be produced only by inoculation with true tuberculous matter, as asserted by high authorities.
2. Whether tuberculosis is only a simple inflammatory process, with peculiar prod-

ucts the formation of which is conditioned by a peculiarity of the organism.

3. The determination of the exact structure of tuberculous products and their place in pathology.

4. Whether tubercles artificially produced in animals are morphologically identical with those occurring idiopathically in man.

As will be seen, my work is a simple record of experiments accurately executed, and a description of the products obtained, with a detailed account of the microscopic examination of the latter. I present conclusive observations and facts relating only to artificial tuberculosis and its morphological products in animals. Human tuberculosis was studied only in reference to the minute anatomy of its products: the clinical aspect was not touched upon. The practical application of the results obtained to human tuberculosis I leave to scientific clinicians and experienced physicians.

I have used in my experiments rabbits, guinea-pigs, cats, and dogs,—altogether over one hundred animals. These, after being experimented upon, were killed from time to time to watch the progress and development of the lesions, or were left to succumb to the disease by natural death. In every case careful autopsies were made. Finally, sections of the organs were made in every case, and examined under the microscope.

The materials used for inoculation were tuberculous cheesy glands and tuberculous lung, both human and from animals, as obtained in autopsies; cheesy matter from animals just killed. Inoculations were also made with normal glands, with blood, and with foreign bodies; again, with tuberculous matter boiled or soaked for a long time in alcohol or subjected to the action of nitric acid. Places of inoculation were beneath the skin, into muscles, and into the peritoneal cavity. The animals were well taken care of, and records were made daily, and the experiments all tabulated.

I will now only enumerate the several series of experiments and give the general results.

First series.—Inoculations made with gray milky tuberculous matter into muscles and below the skin. Eight rabbits were experimented upon. Two of them died of septicæmia within three days, three animals remained well, and three took the disease within thirty-five days.

* Abstract from an inaugural thesis awarded a prize at the commencement of the Medical Department of the University of Pennsylvania, March, 1881.

Second series.—Inoculations made in peritoneal cavity with the same material as above. Ten rabbits were experimented upon. Three of these died of septicæmia within thirty-six hours; five recovered and remained well; two took the disease within forty-five days.

Third series.—Inoculations into muscles with cheesy matter taken from an induced cheesy lump of a rabbit. Eight animals: three positive and five negative results.

Fourth series.—Inoculations at various places with tubercular matter soaked for a long period in alcohol and then subjected to the action of carbolic acid. Forty animals used,—cats, dogs, rabbits, and guinea-pigs. Fifteen animals became tubercular within ten to fifty days; twenty-five animals remained well.

Fifth series.—Inoculations made with blood taken from a healthy dog. Seven animals used. Three animals became tubercular, four gave negative results.

Sixth series.—Introduction of foreign bodies (pieces of wood, glass, sand, etc.) beneath skin. Ten animals used. Four animals developed cheesy lumps at seat of injury and became tubercular in from fourteen to fifty days. Six animals remained well.

Seventh series.—Simple traumatic injury (breaking of leg, etc.) produced tuberculosis within thirty days in two out of six rabbits.

Prof. H. C. Wood and Dr. H. F. Formad, in their researches on the effects of inoculating the lower animals with diphtheritic exudation, performed under the auspices of the National Board of Health in 1880, found that inoculating with this material subcutaneously, when a fatal result was obtained, tuberculosis was present. In order to ascertain whether the diphtheritic matter acted specifically in the production of tubercle, or whether it merely set up a local inflammation which formed a focus of infection, they experimented by putting under the skin of rabbits small masses of innocuous foreign matters; and in these experiments nearly fifty per cent. of the rabbits had also become tubercular.

The immediate result of inoculation of animals with various materials in my experiments was active inflammation. In all these cases there was present a local suppuration as a consequence of a simple traumatic procedure. An abscess thus is

produced, and the (scrofulous) tendency to caseous degeneration in some animals causes the absorption of the liquid constituents, and a cheesy mass results, which acts as a focus of infection.

Cheesy masses were not produced in all the experiments, and in some of the animals the wounds produced healed perfectly and without consequences.

One hundred and nine experiments are recorded in all; and careful observations show twenty-three cheesy masses in thirty-six rabbits, two in eight cats, two in eleven dogs, and eight in fourteen guinea-pigs. It will also be noticed in my experiments that over fifty per cent. of rabbits and guinea-pigs become tubercular. In cats and dogs this tendency is not so common, not exceeding ten per cent. Only in those cats and dogs which were ill-nourished and emaciated did cheesy lumps form at the seat of inoculation or injury, and these were in some instances followed by tuberculosis. I am not aware that anybody really succeeded in inoculating tuberculosis either in the cat or in the dog.

Animals in which cheesy masses were not produced failed to become tubercular.

In some rabbits and guinea-pigs inoculations seemed to have little effect. The animals resisted the affection even after repeated and prolonged experimentation.

The experiments also show that it made little difference in the results whether foreign bodies causing only a simple traumatic irritation or whether tubercular matter was taken for inoculation material. In each case the same cheesy masses occurred, consisting of the same morphological constituents and having the same physical properties as those produced by true tuberculous matter; nor did the tubercular products differ from those induced by genuine tubercular matter. Hence it seems evident that in my experiments tuberculosis was invariably secondary to the cheesy lumps, and consequently an indirect and not a direct result of inoculation.

It appears to me fully conclusive that in these experiments the direct relation between the production of cheesy masses and that of tuberculosis is that of cause and effect.

I have also shown that well-nourished animals do not become tuberculous, and that no cheesy lump could be produced in them. Such animals I would term non-scrofulous; and I believe that the same

relation exists between scrofulous and non-scrofulous animals of the same species as exists between the scrofulous and non-scrofulous in man.

Dogs and cats under unfavorable conditions of nutrition become scrofulous, as the rabbit, guinea-pig, monkey, or, in fact, any animal, may become tubercular, provided it be inoculated when under similar conditions of nutrition.

It is known that rabbits take little liquid food and especially little or no water. Waldenburg suggests this circumstance to be the reason that suppuration in these animals is substituted by cheesy degeneration. I think this very plausible. I have, however, a more important fact in favor of the scrofulous tendency in the rabbit and guinea-pig. In studying the anatomy of the animals experimented upon, Dr. H. F. Formad directed my attention to a peculiarity in the structure of the blood-making organs of the two species of animals named, particularly the latter; and I have myself also had frequent opportunity to observe the following: the lymphatic glands are disproportionately large; the Malpighian bodies of the spleen are larger and more numerous than in other animals, though the organ itself is not large; the marrow of bone is usually red and contains very little fat; the thymus gland is always of considerable size and seems never to disappear, or, in fact, has never been found absent. Besides these peculiarities, I have frequently seen small heteratopic lymphatic structures in the interstitial connective tissue in various parts of the body. The question arises whether this evidently leucæmic condition of these animals has not something to do with their scrofulous tendency. It is possible that this surplus of lymphatic structure and of the lymphoid cells comprising them plays an important rôle in furnishing the elements for the tubercle.

In my experiments most of the animals died in from one to eight weeks. From the time of inoculation up to a short time before death, as a rule, no evident symptoms of disease were manifested. Occasionally I noticed a rabbit refuse to eat, remain quiet in the pen, and finally die. The earliest deaths were caused by septicæmia, the animal dying a few hours after inoculation; or by hemorrhagic infarct following pulmonary embolism, producing asphyxia. At the end of two weeks sev-

eral animals died of croupous pneumonia. When one month or six weeks had elapsed, the lungs were generally tuberculous, and in many instances the vesicular structure was filled with a catarrhal exudate.

In the majority of cases, when the animals were tuberculous, death was evidently produced by tubercular meningitis or tubercular peritonitis.

The tubercles were seen on the highly-congested membranes as diffused gray-looking granulations, which were verified by the microscope. In many instances it was difficult to make any deduction as to the mode of death from anatomical appearances.

The relative frequency with which the internal organs were affected by tubercles varied very much in my animals. The lungs, heading the list, were found tubercular twenty-five times, the spleen eighteen times, the serous membranes ten times, and the kidney and lymphatic glands each seven times. The latter were usually enlarged, but not tubercular. The microscope showed a hyperplasia and congestion of these glands, and only occasionally were they cheesy and tubercular.

In all animals where death was prolonged there was enormous hypertrophy of the blood-vessels of the lung and an infiltration of the adventitia of the blood-vessels by lymphoid cells.

Pyæmic abscesses were found frequently in the rabbit, especially in the liver. They presented yellowish-looking cheesy spots on the surface and in the parenchyma of the organs, varying in size from a pin's head to a pea. These abscesses evidently were produced in the same manner as that by which all pyæmic abscesses are produced, though in one case, in which the animal died in three days, they must have pre-existed. The origin here is not accounted for. A striking feature of some of the livers shown by the microscope is the existence of cystic papillomata with spaces filled with echinococci hooks.

The necessity of a certain duration of life, after inoculation, for the production of tubercle, seems to be shown by the results; yet there is no constant relation of this kind, as the different series show. Nine days may be looked upon as an unusually early period for the production of local tubercle, though, as a rule, general tuberculosis was not found sooner than one month.

ANATOMY OF TUBERCULAR PRODUCTS.

There is a great discrepancy concerning the histology and histogenesis of tubercle. Most of the experimenters did not examine microscopically the products artificially produced. They considered everything tubercle that appeared as such to the naked eye; and it appears to me that in some instances simple collections of lymph and other inflammatory products might be mistaken for tubercle, as I will show hereafter.

The tissues around the cheesy mass at the seat of inoculation are congested, swollen, infiltrated with leucocytes, and discolored with extravasations of blood.

The cheesy mass or infecting centre consists of small round cells, granular epithelioid cells, compound granule cells, connective-tissue shreds, oil-drops, cholesterin crystals, bacteria, and general débris.

Bacteria were present in most of the external cheesy masses, and were found occasionally in the interior of the blood-vessels, air-vesicles, and ducts, but seldom in tubercles,—not even in those of the lung. In some instances they were seen in nearly all organs; but I do not believe they stand in any causative relation to tuberculosis, as has been brought forward by Klebs, Remstadler, Ziegler, and Max Schuller, for the following reasons:

1st. I have failed to detect the presence of bacteria in many cases of artificial tuberculous products.

2d. They are present in all necrotic changes: hence their presence in cheesy masses does not signify anything.

3d. Tuberculosis has not been produced by direct inoculation with bacteria.

The question could arise whether the products obtained artificially in my experiments are really true tubercle. Here I will first refer to the generally-adopted anatomical definition of tubercle.

All modern pathologists describe and define three varieties of tubercle, which I will briefly describe.

1st. *Granulation tubercle*.—These are diffused collections of lymphoid cells, infiltrating the tissues, and impinging upon and obliterating the blood-vessels.

2d. *Miliary or gray tubercle*, occurring in nodules of the size of a millet-seed and composed of a number of submiliary tubercles. Each of the latter is made up of a circumscribed collection of lymphoid cells of rather epithelioid habitus, embedded into a lymphadenoid reticulum. These

miliary tubercles are perfectly avascular, may or may not contain giant cells, and are usually enveloped in a more or less distinct fibrous capsule.

3d. *Solitary tubercle, or tyroma*.—This is an aggregation of a multitude of miliary tubercles.

Any one of the mentioned varieties of tubercle may, and usually does, undergo cheesy degeneration and form a yellow or cheesy tubercle, not distinguishable from a primary cheesy mass.

I succeeded in producing artificially only the granulation tubercle and the miliary or gray tubercle, which showed a tendency to cheesy degeneration in some instances. This so-called granulation tubercle I found most commonly in animals where death ensued within the first two weeks. It consists of an indefinitely circumscribed conglomeration of embryonic connective-tissue or lymphoid cells without any special arrangement, occasionally containing giant cells. In the tubercular granulations of animals which died later, I observed also miliary tubercles.

In many instances tubercle granulations were seen to infiltrate tissue masses or to substitute them, or they were seen diffusely infiltrating the adventitia of blood-vessels, forming in some places nodular collections around them. They were perfectly avascular, and occasionally showed retrograde changes. In most cases they were developed in and surrounding blood-vessels or bronchioles. Sometimes the tubercle granulations infiltrated the septa of air-vesicles, forming nodes which occasionally protruded into the lumen of the latter. This may easily be mistaken for some product of exudation into the air-vesicles. A true catarrhal exudate was, however, frequently present.

I cannot resist the temptation to point out the similarity in the appearance of these tubercle granulations surrounding the bronchioles and alveolar passages with the idiopathic affections in man known as tubercular peribronchitis and tubercular catarrhal pneumonia.

These are appearances occurring in animals at an early period after inoculation.

In specimens obtained from inoculation of a later date—hence in a later stage of development of the lesion—the granulations are seen to arrange themselves more concentrically, forming distinct tubercle-nodules. Those cells within the granula-

tions which go to form the nodules are larger in size than those around them; they are also more granular,—due to fatty degeneration,—and have more or less an epithelioid type. The mode of the development of these nodules is seen very well in my preparations. In any given space of the granulations a certain quantity of cells enlarge, and, meeting with resistance in the surrounding cells which do not give space to these enlarging groups of cells, the latter are compressed together in a more dense mass. The resistance of the surrounding tissue being uniform on all sides, the nodules take necessarily a round shape. The strong compression of groups of cells into nodules—which alone is sufficient to bring on some retrograde changes—appears to me also a sufficient reason for their non-vascularity, also for the arrest of any higher cell-development and for the ultimate destruction of the cell-mass,—that is, the formation of cheesy matter. There is a beautiful analogy to this in the formation of pearly bodies in the epithelioma, in dead epidermis, etc. Dr. Formad believes that the formation of the mentioned pearly bodies is an ante-mortem act of the epithelioid cells to arrange themselves concentrically into compressed nodes, so as to occupy the least possible space, being impinged upon by the new developing cells around them. The rapid proliferation of the younger cells and the pressure from all sides cause the less vital older cells to arrange themselves concentrically into dense dead nodes. A peculiarly rapid formation of pearly bodies Dr. Formad has observed in gangrene of the skin.

The intercellular reticulum in tubercles, upon which so much stress is laid, is as indistinct in the artificial tubercle as it is in the human tubercle. After very careful study and experimentation with reagents, I have convinced myself that this so-called lymphadenoid reticulum, in most instances, is only an artificial product, due to hardening and condensation of the homogeneous intercellular substance. In fresh tubercle examined by teasing or by sections after freezing, neither in the human nor in the artificial tubercle is any intercellular reticulum seen.

There is, however, a variety of tubercle where the cells of the granulations, or even of the tubercular nodes, make an attempt towards organization. These I observed in animals in which comparatively few

tubercular granulations in the organs were produced. I have seen this best in the granulations of the cat and of the dog, and only very rarely in the rabbit. Here some of the cells of the granulations tended to become organized,—that is, attaining spindle-shape and stellate forms, and even slight fibrillation. No tendency to fatty degeneration was noticed. I believe that had the animals lived longer the tissue of the tubercles would have become a higher organized fibrous tissue. Death of these animals was not caused by tuberculosis. Two in which I found this fibroid variety I killed, having waited for the fatal issue for many weeks. Hamilton points out (*Practitioner*, 1880) that tubercles in man undergo this fibroid change and ultimately become small fibromata. It appears to me that some of the animals in my experiments which were tubercular did not die, and recovered on account of the transformation of granular tubercle into the harmless fibroid variety of tubercle.

Giant cells are frequently met with in tubercles, but not more than in any other non-tubercular granulation tissue; so that these cells are properly regarded as not pathognomonic of tubercle. In my preparations I met giant cells most frequently in the initial tubercle granulations; but they also occur in miliary tubercles, although many of the latter do not contain them. The disappearance of the giant cell seems to me to stand in direct proportion with the age of the tubercle, and I believe they are signs of progressive and not retrogressive change, as is claimed by some.

Mistakes are undoubtedly sometimes made; that is, transverse sections of blood-vessels may easily be taken for giant cells, especially if filled with blood or fibrin.

C. Friedländer ("Ueber locale Tuberculose," *Sammlung Klinischer Vorträge*, No. 64, 1873) makes a definite distinction between the giant cells of tubercle and giant cells in other situations. In tubercle giant cells the nuclei lie only peripherally in one row along the border of the cell, whilst in other giant cells the nuclei are scattered throughout the cell. I do not agree with Friedländer in this, as I have frequently seen nuclei scattered throughout the whole giant cell in both human and the artificially-produced tubercles in my experiments.

The question arises, are tubercles artificially induced in animals identical with

those occurring in man? I can answer this question positively in the affirmative. Careful study of human tubercle from numerous preparations made by myself from a large number of cases obtained from Blockley Hospital has convinced me of the full identity of idiopathic tubercle with artificial tubercle.

Simple granulation tubercles, with or without giant cells, are as common in man as they are in animals. The same can be said of the miliary tubercles in man: my preparations show them to be much more common without than with giant cells.

Friedländer could produce an apparent miliary tuberculosis, as he calls it, only when he introduced the inoculable material into the peritoneal cavity. He, however, asserts that the nodules obtained in animals in the different organs were not miliary tubercles, for the following absurd reasons: that they did not have any giant cells, and that they were not tubercles because they could be produced by matter other than tubercular; besides, he asserts that he could produce tubercle-like nodules by traumatic injury in the peritoneum. I fully agree with him that the nodules he obtained on the peritoneal serous membrane were not tubercles, because it is impossible to produce primary tuberculosis in serous membranes. It is very easy, and I myself have succeeded repeatedly in inducing an ordinary inflammatory exudation on this membrane, expressed by minute scattered nodules made up of coagulated fibrin and leucocytes, which fully resembles tubercle; and this is nothing else than what Friedländer did.

CONCLUSIONS.

1. Tuberculosis artificially produced in animals is not due to a specific virus.
2. To produce tuberculosis in animals the inoculation with tubercular matter is not necessary.
3. Failures to produce tuberculosis by inoculation with substances other than tubercular are in the same proportion as failures with true tubercular matter.
4. The introduction under the skin of any foreign substance capable of exciting an inflammation or any traumatic injury can produce tuberculosis, provided the animal is of scrofulous habitus.
5. Scrofulosis in animals is expressed by an inflammation terminating in the production of a cheesy mass.

6. Animals not generally scrofulous (cats and dogs) may become so, and then only tuberculosis can be produced in them.

7. Miliary tubercles are simply compressed aggregations of cells of any simple granulation tissue, ill nourished, into small nodes. The arrangement into nodes represents a true ante-mortem act of cells, to which any young inflammatory connective tissue is liable.

8. Under favorable conditions of nutrition, tubercles in animals may undergo a higher organization, becoming converted into harmless small fibromata.

9. Tubercles artificially produced in animals are histologically strictly identical with those occurring in man.

RECORD OF TWO CASES OF CEREBRAL DISEASE.

Read before the Philadelphia County Medical Society, October 26, 1881.

BY H. C. WOOD, M.D.

CLOT IN THE LEFT CLAUSTRUM, WITH APHASIA—GLIOMA OF FRONTAL LOBE AND OLFACTORY BULB, WITH HALLUCINATIONS OF SMELL.

THE first case here reported I saw in consultation with Dr. Hext M. Perry. It is one of a class to which attention was first drawn by Sanders (*Archiv f. Psych. und Nervenkr.*, ix.). The explanation of the aphasia seems to me to be looked for not in the claustrum having any direct connection with speech, but in the probable destruction of the neighboring white fibres connecting the gray matter of the island of Reil with the lower centres. A clot certainly may occur in the claustrum without aphasia. In the present case, and probably in all parallel cases, the clot was a large one and pressed greatly on surrounding parts. The case illustrates the difficulties which surround the minute diagnosis of cerebral disease. During life the symptoms were supposed to be due to a disease of the third frontal convolution; and even with the light of the autopsy it seems impossible to have avoided the error.

Case I.—Mr. W. R. K., about 40 years old; was addicted to use of alcohol in excess; had been much exposed as policeman, and in Nevada. He had a venereal sore about 1870, but had never had any specific symptoms since 1874; and it is uncertain whether he ever had syphilis. Through February and part of March, 1881, he complained much of nausea and feeling of weight in the back of his head and down the neck, with occasional

very brief neuralgic headache. At this time there was also non-saccharine diabetes, the amount of urine varying much from day to day. There never was any sugar or albumen in the urine. This condition, after lasting some weeks, passed away, and the patient seemed well. On March 20, in the afternoon, his speech suddenly changed, and he began to sputter and mumble instead of speaking out words; there was at the same time intense pain in the head, which lasted all Saturday night and Sunday. Sunday night he walked the floor all night. Monday morning he went suddenly into a stupor, in which he lay for several days. The leg and arm were paralyzed first on Monday. The leg was never entirely paralyzed, but was so bad he could not lift it over an obstacle, and he could not walk without help. In the arm, motion was almost entirely lost. There was no distinct increase in the trouble with his speech at this time. The aphasia was almost as bad Sunday as afterwards. After Monday, he was at first heavy and very stupid, but his intellectual powers slowly came back: he always remained apathetic and much below normal in mental action.

From the time of his first paralytic stroke his leg slowly improved, so that when I saw him in the latter part of April he could walk with the aid of the arm of his wife, but was not able to lift his foot over any obstacle. His arm did not improve nearly as much as the leg; all the normal movements of it could be made, but very feebly. The aphasia was persistent up to death, but was somewhat ameliorated in that his vocabulary increased from one or two to half a dozen words,—"yes" and "no" and certain nouns, such as "chicken." All through the aphasic condition he was very apt to get angry on attempting to speak, and, after continued vain efforts, would exclaim, "Damn it!" Sensation was not affected. There were no other symptoms save those noted; and on May 2 a second apoplectic seizure occurred, from which he never rallied, but died May 4, comatose.

Autopsy.—The liver and kidney I did not see, but Dr. Perry, who made the autopsy, states that they were both in a state of marked fatty degeneration. Brain: right side with a large very recent clot in the frontal lobes tearing and destroying the structure; left side, a clot occupying the whole position of the claustrum, whose structure had entirely disappeared, and pressing sharply upon the external capsule, some of whose fibres seemed to be ruptured. There was also some pressure upon the lenticular nucleus, but no softening had resulted.

The following case is of interest as affording an example of an hallucination which, like many other similar fancies, rests upon a distinct physical basis. Hallucinations of smell are relatively uncommon; and I

cannot at present recall any case more nearly parallel to that which I am about to narrate than one recorded by Kussmaul, in which an attack of aphasia was ushered in by a strong peculiar subjective odor.

Case II.—I visited Mrs. S., aged 46, first, October 21, 1881. I was informed that she had been a healthy woman up to last March or April, when it was noticed that she was becoming more garrulous, and that, whereas she had formerly been quiet and retiring, she was getting into the habit of visiting neighbors frequently and gossiping much. Her conversation also at times seemed strange; and one day she affirmed that a neighboring smith smelt so strong she could not endure him,—no one else being able to detect any odor. These symptoms increased, and in a little time she began to have headaches, which persisted with occasional exacerbations and were always localized in the forehead. She seems to have complained frequently of a persistent disagreeable odor, and at an uncertain time began to have "spells," which were sometimes, if not always, ushered in by a very strong odor. She would call for a drink, immediately become excessively pale and unconscious, and the next moment "all the blood in her body would be in her face." It was further stated that the unconsciousness only lasted for an exceedingly brief period, and that frequently there were very decided "tremblings" of her left arm and leg during the attack. In the late summer and early autumn she suffered much from sleeplessness and gradually lost control over her left arm and leg. At times she had hours of stupor.

When I saw her, she was in a mild stupor, out of which she was aroused with some difficulty; was rambling in her talk; had nearly complete left hemiplegia; small, very sluggish pupils; no paralysis of ocular muscles; no loss of general sensation. She answered my questions fairly well, but when salt was put in her mouth failed to recognize it; nor could she tell cologne by its odor. Her brother-in-law coming to her, however, she complained of his smelling of tobacco; but whether she really perceived the odor or simply was led by old associations was uncertain. She complained much of headache and had been very restless previous to the stupor. The next night she was restless; but on October 23 she became comatose and died.

Autopsy.—Examination of brain only allowed. It was normal, except the frontal lobe, which was enlarged and had its olfactory bulb converted into a somewhat translucent grayish body of irregular form, in its widest part twelve millimetres wide and six millimetres thick, and in length five centimetres. It was composed almost solely of gliomatous cells. In the interior of the lobe, coming to the surface at the base of the olfactory bulb, was a diffused glio-sarcomatous

tumor involving the lenticular nucleus and capsular parts of the frontal lobe, also apparently the optic thalamus. The general gray matter of the cortex was seemingly not involved.

KAKKÉ: A DISEASE OF JAPAN.

BY W. NORTON WHITNEY, M.D.

THE rapid strides towards civilization made by certain Eastern nations of late, the increasing facilities for travel between their countries and this, together with a notable annual immigration, make a knowledge of the special diseases of those countries a matter of no little importance to the American profession. The object of this article is to call attention to a disease known in Japan as Kakké, and from which several deaths have already occurred in this country. I have had opportunity of studying this disease during a residence of several years in the country of its endemic prevalence, and since my return have had under my observation two cases,—one an old resident of Japan, who exhibits some of the characteristic symptoms of the disease,* and the other a native who has had veritable Kakké.

Kakké is the name applied by the Japanese to a peculiar disease endemic in certain low-lying malarial districts of Japan. It is recurrent, non-febrile, and non-contagious, and is most prevalent during the summer months. Palpitation of the heart, anæsthesia of the skin, tenderness of certain groups of muscles, partial paralysis of others, præcordial oppression, systolic murmurs, and dropsical effusions, together with nausea and vomiting in severe cases, are characteristic symptoms.

It is the opinion of those who have studied the disease that it is caused by a specific poison. Dr. D. B. Simmons, of Yokohama, whose residence of over twenty years in Japan and familiarity with the disease in all its phases entitle his opinion to the highest respect, believes that its cause is "a specific miasm, or soil-exhalation, like paludal malaria." Overcrowding, bad drainage, and bad ventilation seem to develop the poison in systems debilitated by these or other causes,—as sedentary occupations, labor, low diet, or non-assimilation of food; while non-acclimatization, occupation, diet, season,

and sex seem to be the principal predisposing causes.

It is claimed that Kakké is identical with beriberi, endemic in Ceylon, in certain portions of India and of the East Indies, and in Brazil. However this may be, the appearance of certain symptoms in the one not found in the other warrants a separate description of the Japanese disease.

The different forms of the disease are characterized by special symptoms,—the *dropsical*, by effusion of serum into the subcutaneous connective tissues and serous cavities; and the *atrophic*, by rapid wasting of certain muscles and diminution of the fluids. The general symptoms, briefly stated, are: prodromic lassitude, local anæsthesia (first over tibiæ, tips of fingers, anterior surface of thigh, and outer side of arm, lower portions of the abdomen, and around the mouth), tenderness of posterior muscles of the legs and of the upper part of the chest and subscapular regions, and partial paralysis of muscles underlying seats of primary anæsthesia, together with atrophy and spasm in some cases. Paralysis of the sphincter ani and bladder have never been met with in uncomplicated cases. Palpitation is nearly always present, and often very distressing. The pulse often ranges as high as 140, and a systolic murmur, most marked over the base and great vessels, is often heard early in the course of the disease. The area of præcordial dulness is extended in the dropsical form. The appetite and digestive functions are generally somewhat impaired, and nausea and vomiting may come on during the later stages of the disease. Dyspnoea, nearly always present with palpitation, is generally a concomitant of hydrothorax or œdema of the lungs. Præcordial oppression is often complained of. The urine is diminished in quantity, with high specific gravity and excess of solids. Albuminuria and hæmaturia are seldom observed. Dropsy is present in the large majority of cases, generally appearing over the tibiæ and then gradually involving the whole of the lower extremities, although in many cases, it is said, it only extends as far as the ankles. The dropsy may also invade other portions of the body, and effusions into the substance of the lungs, into the pleural sacs, and into other serous cavities are not uncommon. The face, however, seldom becomes œdematous, and never as markedly so as in kidney diseases. The

* It is a significant fact that the majority of foreigners who have been compelled to leave the country by reason of failure of health have been suffering from paralysis or nervous prostration.

mind is usually clear and the senses unaffected. The temperature varies, but is seldom high, being generally normal or below. Anæmia is present in the majority of cases, from which fact it has been claimed that Kakké is a disorder arising from anæmia. The anæsthesia, hyperæsthesia, paralysis, and dropsy are almost invariably bilateral.

Kakké may be complicated with other diseases and thus overlooked. Among the principal diseases with which it has been associated are malarial intermittent, typhoid fever, dysentery, and diarrhœa. The general and special symptoms may not occur in their usual order or intensity, one set of symptoms being more or less prominent. As to the pathology of Kakké, little is known, as the prejudice against post-mortem examinations is great, and consequently few have been made. The symptoms, however, indicate the spinal cord, medulla oblongata, and sympathetic centres as being involved. Examinations of affected muscles taken from a patient during life showed, under the microscope, extensive degeneration.

Treatment.—The Japanese physicians, practising according to the old Chinese system, administer cathartics and some secret remedies, at the same time ordering nitrogenous food.

Cathartics and diuretics are now employed by foreign physicians to reduce the dropsy and carry off the *materies morbi*. Aconite is employed to reduce the activity of the heart and muscular hyperæsthesia, and strychnia and electricity for the atrophied and palsied muscles after the height of the disease. The removal of the patient from the district where Kakké occurs, or even to a greater altitude in the vicinity, is found necessary, and, together with improvement of hygienic condition and proper medication, generally effects a cure.

As the above sketch only gives a brief outline of this peculiar disease, reference may be made to the following papers: "Beriberi; or, the Kakké of Japan." A monograph by Dr. D. B. Simmons, of Yokohama. A very complete paper. Trans. of the Deutsche Gesellschaft für Natur und Volkerkunde Ostasiens, July, 1873. Dr. Anderson, in St. Thomas's Hospital Reports, N. S., vii. 5, viii. 247. Trans. Asiatic Soc. of Japan, 1876; and a manuscript thesis by Osam Nagura, 1880, Stillé Library, University of Pennsylvania.

NOTES OF HOSPITAL PRACTICE.

HOSPITAL COLLEGE OF MEDICINE, LOUISVILLE, KY.

CLINICAL SERVICE OF DUDLEY S. REYNOLDS, M.D., PROFESSOR OF OPHTHALMOLOGY, OTOTOLOGY, AND LARYNGOLOGY.

Reported by ALLEN KELCH, M.D.

OPHTHALMIA NEONATORUM.

GENTLEMEN,—I wish to call your attention to that form of disease of the eyes which attacks new-born infants,—*ophthalmia neonatorum*. It has long been an established fact that a peculiar form of inflammation manifests itself in the conjunctival membrane of infants from the third to the tenth day after birth. Attacks of inflammation may occur, it is true, after that time has elapsed, but not such as are supposed to be directly connected with birth itself.

Occurring, as it most frequently does, as a muco-purulent form of disease from the beginning, occasionally as a violent purulent inflammation, many theories have been advanced as to its probable cause. Not a few of our best practitioners maintain that it proceeds from gonorrhœal infection, occurring in the passage of the child through the vaginal canal. While this might take place, it cannot be considered the principal cause; for too many instances are known wherein the mother had no vaginitis, and where the infant has not been afflicted until after the first week following birth. Many instances occur in which the cause of the disease is in no way referable to the mother's condition.

The muco-purulent affections, it is thought by some, are due to the presence of a milder or chronic form of vaginitis in the mother; and, while this may be true, the proposition manifestly does not apply to all cases. Nearly all writers ascribe both the muco-purulent and the purulent form of conjunctivitis to the early and sudden exposure of the child's eyes to light. It is a popular prejudice among midwives and among people in the lower walks of life that an infant will have sore eyes if in the first day or two of its independent existence it has looked out into the light or upon the light of the fire. Whilst the effects of light upon the eyes of new-born infants may be highly irritating, light alone has not the power to produce a muco-purulent inflammation of the conjunctival membrane; much less has it

the power to produce a dangerous form of purulent inflammation. Therefore you are not to believe that anything less than a specific virus, transported, it may be, in the air, by the hands of the nurse, in a wash-rag, a sponge, or perchance produced by the direct contact of purulent material in the genital passages of the mother, is adequate to the production of the purulent and muco-purulent inflammations to which we now refer.

There are regions of the earth, particularly in warm climates, where muco-purulent inflammations occur at regular seasons of the year, and prevail to such an almost universal extent that travellers conclude that everybody has sore eyes. This form of conjunctival disease is one of the manifestations of malarial poison. But muco-purulent inflammations affecting the eyes of infants are not likely to be due to malarial causes. But that such inflammations are frequently due to poisons transported by the air is undeniable. In vain it may be argued that the entire family have enjoyed an immunity from the ordinary manifestations of atmospheric poisons until the advent of this child, who is seized with a muco-purulent conjunctivitis. No principle perhaps is better established than the fact that poisonous air may be limited to an extremely small extent of territory. It may be restricted to a single chamber, and even to a single corner of that chamber; it may be confined to the sick-room alone. On the other hand, it may pervade a whole neighborhood, region, city, or State. That decomposing substances, as animal and vegetable matter, may have something to do with the production of muco-purulent inflammation is probable, because any inflammation may develop a condition favorable to the production of mucus in such quantities as to insure its degeneration into pus. We have already seen that catarrhal inflammations may be aggravated in severity until they pass through the various grades of intensity to purulent inflammations; but if the disease began as a purulent form it is certain that some specific cause must have operated in its production. Those cases that begin with violent symptoms are to be set down as due to some kind of specific contagion, whether floating in the air or transported in some unknown way, the exact mode being not always determinable. Bearing in mind now, gentlemen, how delicately

the mucous structures of the eye are organized, you will readily recognize the importance of delicate manipulations in the methods of treatment. You all recognize the fact that, if the formation of pus continues, the greatest care must be exercised if you would prevent its confinement in direct contact with the eyeball, and especially the cornea, which is extremely soft and susceptible to the action of heat and poisonous pus. If this continued contact be permitted, the cornea will be seen suddenly to become hazy, and may in a few hours slough away. Therefore it is a matter of great importance that the parts should be kept in a condition to allow the accumulating secretions a free mode of exit. To do this, it is necessary to apply some kind of ointment to the lids after thorough cleansing; and the question then arises, What shall we prefer to prevent the adherence of the lids?

A long experience has demonstrated to me the superiority of a solution of chloride of sodium as a cleansing agent, the solution to vary in strength according to the previous duration of the disease. During the early manifestations it should be extremely weak; but let me beg you, gentlemen, just here, to be not guilty of carelessness in writing your prescription for an agent, even though it be so simple as chloride of sodium. Two grains to the ounce of water is usually sufficient, with directions to drop it into the inner angle of the eye, allowing it to flow out upon the temporal side. The tears and matter having thus been washed away, and any surplus moisture removed by a wad of absorbent cotton pressed against the eye lightly, vaseline is perhaps the best preparation in the form of an ointment to be applied to the surface and edges of the lids. If great care and attention be not bestowed upon an affected eye, and cleansing measures resorted to sufficiently often to prevent the accumulated fluids from being retained between the lids and the globe, destructive changes will be liable to occur, and that, too, with astonishing rapidity; and even after a patient has wellnigh passed the dangerous stage, a neglect of these precautions will entail the dangers of relapse. Relapses occur so suddenly and with such violent symptoms as to lead to the destruction of eyes that a few hours before seemed to be out of danger. Therefore you are to regard with constant anxiety the pres-

ence of pus upon the conjunctival membrane.

I was very much surprised to read in a journal a year or two ago an article from the pen of my friend Prof. Smith, of Detroit, in which he uttered the strongest condemnation of the habit of frequent applications to the eyes of new-born infants affected with the more violent forms of purulent inflammation. It was argued by this gentleman that the proper thing to do is to anoint the edges of the lids and then disturb them not oftener than twice in twenty-four hours. I cannot help thinking his experience must have been limited, or his nurse disobedient to instructions, or the cases treated thus of the mildest type. Of course he reported successful results.

To the shame of the medical profession, it is urged by many that nitrate of silver in solution, in strength from ten to sixty grains to the ounce of water, must be applied to the everted lids of infants thus afflicted. That such practice is followed by fatal results may be testified to by any practitioner of ordinary experience; that it is attended by uniformly bad results is attested by the fact that, while ten or fifteen years ago it was the fashionable practice, it is now almost wholly discarded by the profession in general, while those of large experience with this class of cases have almost entirely excluded it as an agent for local application to the conjunctiva. Mac-Namara recommends the instillation of a three-grain solution of nitrate of silver between the eyelids every three or four hours, and in urgent cases every two or three hours. In addition, he directs the daily application of a saturated solution of silver to the external surfaces of both lids.

The application of a saturated solution in one melancholy instance that came under my notice was followed by sloughing of the upper lid.

It has been stated upon high authority that a ten-grain solution brushed with a hair pencil over the lining of the lid produced universally successful results. A careful examination into the statements of this authority revealed the fact that many cases were lost sight of after a single application; and in one instance occurring in this gentleman's practice it is known that the cornea sloughed *en masse*, the case being reported recovered, when it should have been reported "lost sight of."

In the treatment of conjunctival inflammations the greatest tenderness is necessary, and the mildest and most soothing agents should be employed. A two-grain solution of chloride of sodium, applied as I have detailed, needs only to be substituted by the stronger salts when the disease tends to become chronic. After two or three days, if the disease shows a disposition to remain severe or to proceed in opposition to this treatment, the lid should be everted, and if there is present, as will usually be found to be the case in these instances, a disposition to hypertrophy of the papillæ, an astringent solution then becomes necessary, and for that purpose the sulphate of copper—five grains to the ounce—may be applied once in twenty-four hours. This solution coagulates the mucus and pus, which then becomes irritating, acting as a foreign body upon the surface on which it lies, and therefore it should be promptly removed. Next in order may be mentioned the borate of soda, which, besides having the power of dissolving fibrinous matters, is more astringent and less stimulating than the chloride of sodium. In the more advanced stages, where hypertrophied papillæ are present and have existed for perhaps weeks, it may become necessary to make even more powerful applications than those to which I have alluded. In that case the application should consist of a saturated solution of the muriate of ammonia, or the solid stick itself applied to the surface of the everted lid and to the retrotarsal folds.

The sulphate of copper should not be used in the solid form, but in solution, varying in strength from five to ten grains to the ounce of water, and, while it cannot safely be used more frequently than once in twenty-four hours, the ammonia can be used with impunity several times in that period.

If there be haziness of the cornea, sulphate of copper, in any form or strength, should be rigorously avoided. Should it be used, the ulcerated cornea is liable to perish in consequence of the affinity copper has for the water of soft structures. It is a powerful astringent, and vessels partially contracted become completely so under its application. Very cold applications are advocated. I think it is a safe rule to be guided by, to consider cold inadmissible when there is much swelling of the lids, and hot applications likewise not

indicated if swelling be absent. In other words, you are to remember that cold will prevent inflammatory reaction, and that when once the inflammation has occurred the surrounding tissues are infiltrated and cold is no longer indicated. It often happens in the purulent ophthalmia of newborn infants that extensive infiltration occurs into the loose connective tissue of the lids. The upper lid becomes enormously swollen, of a scarlet hue, and there may be such violent action as to develop what is known as a phlegmonous inflammation, the upper lid assuming a scarlet and angry appearance, being so tumefied, firm, and hard as to present the appearance of a huge mass of raw flesh hanging upon the cheek. Of course this is a condition found in extreme cases only, though it is by no means rare, and it tends greatly to complicate the conjunctival inflammation, as well on account of the mechanical obstruction it offers to proper medication as because of the mechanical pressure upon the inflamed structures beneath. In such a state of things, of course, the cornea must soon perish unless something be done to relieve the pressure and expose it to the air. That the cornea may slough under these circumstances constitutes the chief danger. Those cases attended by this condition, which prevents your inspection of the eyeball, are to be met, and met promptly, by surgical interference. A pair of scissors should be at once passed into the external canthus, and the tissues divided freely out to the temporal margin, after which the bleeding may be encouraged by warm applications. The serum and blood escaping, the swelling will be found to subside quickly, and, a restoration of the circulation being established, improvement soon becomes manifest. A wound in all respects identical with that made in the operation for canthoplasty remains, and this finally closes, leaving no visible scar. No fear of cutting must be indulged in these cases, offering as it does the only means of relief from local pressure: so long as pressure is exerted upon the eyeball, there can be no benefit from any treatment. Another precaution to be taken is that the child should be exposed to pure fresh air. It often happens that children lose their eyes through the carelessness of the nurse in this respect; especially is this apt to happen in cold weather, when the doors and windows are kept closed. The air of the

lying-in chamber is always contaminated, and the infant should spend most of its time in another room. A good nurse understanding this will be able to accomplish all that is necessary. Lastly, a strict watch is to be kept upon the progress of these cases. They should be seen once, at least, every twenty-four hours. Attention to the manner I have detailed, assisted by good judgment founded on general principles to meet any conditions of minor importance that may arise in the progress of a case, will be attended by a degree of success as satisfactory to the parents interested as it is gratifying to your professional pride as a successful practitioner.

TRANSLATIONS.

EXPERIMENTS IN THE RESTITUTION OF SEPARATED PIECES OF BONE.—Jakimowitsch (*Cbl. f. Chir.*, October 8, 1881; from *Deutsche Zeitschr. f. Chirurgie*) says that as yet experiment has shown only that bits of flat bones, when entirely separated, may grow again; regarding bits of long bones, only one successful case of re-growth has been reported, with many failures. In order to ascertain whether, in fact, bits of long bones grew again readily, or at all, when entirely detached, Jakimowitsch made some twelve experiments, of which ten were crowned with success. These experiments were made in various ways. With a chisel, or more frequently with a saw, flat or wedge-shaped bits of bone of considerable size were removed, after raising the periosteum, and either replaced as before, at once, or turned upside down, so that the cortical face should lie next the medullary cavity, etc. The entire operation was performed with strict antiseptic precautions, the pieces detached being washed in carbolic acid. After their replacement, the periosteum, which had been turned aside meanwhile, was fastened in place with catgut, and the extremity then enveloped in salicylated cotton, which was firmly held in place by means of a gum bandage. Finally a plaster-of-Paris bandage was applied over the whole, in order to attain the most perfect fixation possible of the loosened piece of bone. That the latter was firmly held in place was made sure by three means: 1, by injection of its vessels with blue gelatin solution; 2, by

microscopic examination; 3, by feeding the animal for a long period with madder.

Jakimowitsch formulates his conclusions essentially as follows. Bits of bone from the diaphysis of the long bones, which have been removed and replaced, will grow again if soon returned to their former relative position with the rest of the bone. They then form a living part of the original bone. The same occurs when the extracted piece of bone is replaced inside out. A piece of bone separated from all connection with its original locality and pushed into the marrow of the long bone may become incorporated with the inner surface of the latter, and with the callus which under these circumstances forms within the medullary tissue. The replaced bits of tibia in young dogs functionate, as the result of feeding on madder shows, in the peculiar manner of these bones, in particular in the growth in thickness.

In a further series of experiments the fate of excised bits of bone or entire bones after transplantation into the soft parts, or to other bones, was studied. It was found that bits of bone taken from the long bones and transplanted into soft parts became partly encapsuled without any alteration in their structure taking place; in part, however, they became dissolved in an adventitious tissue rich in cells by the penetration of vessels. A piece of the phalanx from a rabbit, which was transplanted with its articulating surface applied to the outer surface of the femur of another rabbit, grew so firmly in this position that it presented the appearance of a natural outgrowth from the femur. A piece of the phalanx of a rabbit grew in part to the skull of a dog by newly-formed bony material, and was in part absorbed. The success of these experiments depended upon the entirely antiseptic course followed by the wound.

CONTRIBUTION TO THE STATISTICS OF CARCINOMA (EPITHELIOMA) OF THE LOWER LIP.—Koch (*Cbl. f. Chir.*, 1881, No. 40; from *Deutsche Zeitschr. f. Chirurgie*) has collected statistics of all the cases of carcinoma of the lower lip operated upon in the Erlangen clinic between 1860 and 1880. He gives one hundred and forty-eight cases, of which two were operated upon by Thiersch previous to 1860. Of the latter, one died seventeen years after the operation without having had a relapse. The others still live. Of the remaining

one hundred and forty-five cases, one hundred and thirty-two were men and thirteen were women. The cases were all, with one exception, between sixty and seventy years of age. The exceptional case was over eighty. In fifteen cases some injury was referred to as the cause of the disease, —sometimes a direct blow, in other cases burns, as from an inverted cigar, in others chaps and fissures. In six cases the pressure of a pipe was supposed to have been the cause. In eight cases the patients had suffered with tumors. One hundred and thirty-one lesions were primary, fourteen were relapses. The duration of the lesion varied between fourteen days and nine years. In two cases it was referred to injuries which had occurred respectively twenty-five and thirty-six years previously. Leaving these two last cases out, the average duration was 1.9 year. In forty-eight cases there was enlargement of the lymphatic glands; most frequently the submaxillary glands of one side were those involved (fourteen cases). The diagnosis of carcinoma of the glands was made out for certain only in seven cases. Of the one hundred and thirty-one patients, one hundred and fifteen were cured, four were not cured (*i.e.*, suffered from relapse at the point operated upon), and twelve died, of whom seven had shown the propagation of the carcinoma to the submaxillary glands. Metastases to other organs were not found in any autopsies. The later history of one hundred and six cases is known. Of these, fifty-three are dead, —twenty-three from relapse of the affection, thirty from other diseases. Of the forty-three survivors, three, when looked up, showed relapse of the carcinoma, while thirty-nine remained free. If the cases are looked at from the point of prognosis, it is seen that thirty-six ran an unfavorable course, while twenty-eight ran an absolutely favorable one (over five years without relapse). Four of these went on for twelve to sixteen years without showing a sign of relapse, sixteen ran a relatively favorable course (three to five years without relapse), while twenty-five ran an as yet undetermined course. Of the fourteen patients operated upon for relapse (one had not suffered the relapse until ten years after the first operation), only four are living and without relapse, one as long as three years.

THE TREATMENT OF FURUNCULOSIS BY BORACIC ACID.—Dr. Loewenberg (*Le Progrès Médical*, 1881, p. 658), regarding the

furuncle as due to the invasion and multiplication of a parasitic microphyte, abandons, of course, all the old-fashioned forms of treatment based upon an erroneous view of the pathology of the affection. Above all he recommends abstention from the use of emollients, poultices, etc., which serve merely for the purpose of supplying that moisture and heat which are most favorable to the germination of the parasites, besides furnishing aliment for their sustenance. The problem being given to neutralize the evil influence of the micrococcus, the question is, what agent will best serve this purpose while not injuring or irritating the organs on which it must act? Thanks to the researches of J. B. Dumas, we now possess a substance—boracic acid—which fills all requirements. Boracic acid is strongly toxic for inferior organisms, which it kills by depriving them of oxygen, while at the same time it possesses the great advantage of not irritating the organs with which it is brought into contact,—the bladder, for example.

Dr. Loewenberg prefers boracic acid, although he admits that it is quite possible that other antiseptic agents—as benzoate of sodium, resorcin, etc.—would serve the same purpose. He incises the furuncles if they are not already open, so that the antiseptic agent may be brought directly in contact with the focus of infection. The incision should pass through the centre of the furuncle (generally marked by a hair); and, in order to prevent pain, ether spray may be thrown against the spot. The incision made, Dr. Loewenberg immediately applies fomentations with an aqueous solution of boracic acid saturated in the cold. Latterly he has used alcoholic solution of boracic acid, the alcohol itself constituting an excellent substance for combating the action of the micro-organisms. In one case, where the furuncle was recent and where the patient absolutely refused to have an incision made, it was observed that simple fomentations with boracic acid resulted in the arrest of development of the inflammatory process. Dr. Loewenberg thinks this was because, in the early stage of the furuncle, the hair-follicle leading down to the focus of infection was not yet closed, and offered an opening for the entry of the antiseptic. Perhaps a good plan would be to inject a few drops of the solution directly into the follicle before the full development of the furuncle. Be-

lieving auto-inoculation possible, Dr. Loewenberg is in the habit of sealing each furuncle with a pledget of charpie soaked in the boracic-acid solution, either aqueous or alcoholic. He also insists upon the most scrupulous cleanliness, with the view of preventing pus from the suppurating furuncles being carried to new points and inoculated through the hair-follicles. Powdered boracic acid is also regarded by Dr. Loewenberg as an admirable dressing for open furuncles.

NOCTURNAL HALLUCINATIONS AND TERRORS IN CHILDREN AND ADOLESCENTS.—Dr. F. L. Debacker, in his thesis on this subject, concludes as follows:

There are two essentially distinct kinds of hallucinations and nocturnal terrors,—one of non-cerebral, the other of cerebral origin. The first are usually produced by gastro-intestinal indigestion from various causes, difficult dentition, intestinal worms, constipation, diarrhoea, excessive emotion, etc. The second depends on past affections of which the traces have remained and show true cerebral lesions. Such are the nocturnal terrors and hallucinations of convalescents from typhoid fever and pneumonia, and also those who are suffering from exhaustion. They constitute a category by themselves, which might be designated by the name of delirium from general inanition.

Other hallucinations and terrors are the symptoms of present cerebral maladies. Their chief characteristic is their persistence. This is the case with the idiocy, the delirium of persecutions,—the dementia, in a word,—of children.

A third category, again distinct from the others, is that of hallucinations and terrors prodromal of future cerebral disease, under which may be ranged all the candidates for insanity. Heredity ought to be examined into with especial care in these cases. Tuberculous meningitis, epilepsy, hysteria, idiocy, must be apprehended, especially in precocious children,—the protopathic hallucination of Luys. Finally, other hallucinations and terrors occur which cannot be comprised under any class: these are the cases where these symptoms are due to the effects of various poisons.

The physician, called to see a child whose nocturnal terrors have alarmed the parents, should go over in his mind all the causes above mentioned. Most frequently he will have to deal with an affection of

the first class, some gastro-intestinal disorder easy to do away with, and the diagnosis will be confirmed by the cessation of the nocturnal terrors when constipation is overcome, or diarrhœa checked, worms expelled, or pruritus of dentition cured. In addition, however, the physician must examine as to the existence of hereditary alcoholism, abuse by the nurse, saturnine encephalopathy, absorption of belladonna, opium, or quinine, etc. If, however, the nocturnal crises persist, the physician must be on the lookout for an outbreak of some serious disorder. Hygienic measures are to be carried out with great care.

QUEBRACHO: THE PRESENT STATE OF OUR KNOWLEDGE OF THIS DRUG.—Dr. Franz Penzolt, whose name is identified with this drug, the good qualities of which have been the source of some dispute, comes forward with some new facts regarding it in a brochure analyzed in the *Deutsche Med. Wochenschrift* for September 17. The differences of opinion which have come to light relative to the effects of quebracho have arisen, in Penzolt's opinion, chiefly from the employment of various drugs—some of less active character—under this name. Under the name quebracho, the bark and wood of very various trees are met with in the market. Hansen enumerates four different plants from which quebracho preparations are derived; while Stuckert asserts that there are even several more woods known under this designation. Two kinds only are of practical interest at present,—1, Quebracho blanco (*Aspidosperma quebracho*); and, 2, Quebracho colorado (*Loxopterigium Lorenzii*). With the bark of the first Penzolt made his earlier experiments. Later he experimented with the wood of the *Loxopterigium*. He now speaks in the first place of the bark of the *Aspidosperma*. Two varieties are in the market,—a quebracho blanco bark from Cordoba and one from Saltá. The wood and bark differ externally. The bark from Saltá is the best, on account of the greater amount of alkaloids which it contains. The results of recent researches, as well as the assertions of other authors, confirm Penzolt's views as to the value of quebracho blanco bark. In idiopathic and symptomatic asthma (the latter cardiac, renal, emphysematous, or pleuritic in origin), Penzolt recommends it in one to two teaspoonful doses of the extract thrice daily. That

quebracho is infallible Penzolt does not assert; but he does insist that it is preferable to narcotics, iodide of potassium, digitalis, etc., in certain cases.

As to the effect of the alkaloids of quebracho, Penzolt draws attention—in addition to aspidospermin, which he has used for some time with good results—to quebrachin, a new alkaloid discovered by Hesse. He believes these alkaloids to act by giving the blood power to take up more oxygen than under normal circumstances. The explanation of the toxic effect is as yet hypothetical.

Quebracho colorado is not so active as quebracho blanco, but it is cheaper. Penzolt says that alkaloids are not found in the wood, and only sparingly in the bark.

LATENT MENINGITIS, ACCOMPANYING PNEUMONIA.—Firket, in a brochure reviewed in *Le Progrès Médical*, 1881, No. 39, says that the meningeal complications of pneumonia, especially acute meningitis, have long engaged the attention of pathologists. An epidemic of cerebro-spinal meningitis occurring in Germany in the year 1863 caused attention to be drawn to the relations between affections of the lungs and those of the meninges in general, and a number of papers have since then been published upon the subject. An interesting feature in these cases is that the meningitis of pneumonic patients rarely shows itself with the well-marked features of spontaneous meningitis. Frequently the affection passes unnoticed, or at least the nervous symptoms manifested are not sufficiently well accentuated to establish the diagnosis. Dr. Firket has observed, in the post-mortem room connected with the University of Liège, three cases of this character remarkable for the complete absence of symptoms. The cases were those of pure croupal pneumonia. No symptom had called attention to the cerebro-spinal nervous centres, but nevertheless in all three cases the autopsy showed an already purulent exudation in the cerebral meninges. The lesions were superficial, the membranes being detached without difficulty from the cortical layer, which was not involved. In the cases reported by Firket, not only were alterations observed in the meninges, but also, depending on the nature of the case, in the pleura, the pericardium, and the endocardium. Dr. Firket seeks to show a relationship between these various symptoms and to

find out what is the link which connects them. He believes them all to depend upon a general infection,—possibly by microscopic parasites. He says that meningitis occurs once in every two hundred to two hundred and fifty cases of pneumonia.

THE TREATMENT OF BURNS.—In a recent lecture, Nitzsche (*Deutsche Medizinische Zeitung*, 1881, No. 2), who, as surgeon to a very large iron-works, has many opportunities of studying the effects of various remedies in severe cases of burns, describes his method of treatment. He first disinfects the burned surface thoroughly with carbolic acid, having previously protected the blebs, and then covers it with a thick varnish of linseed-oil and litharge, which has been mixed with five per cent. of salicylic acid by the aid of heat. So soon as the first coating of this varnish is dry, a second is laid on, and the parts are then covered with a thick coating of wadding, kept in place by an elastic bandage, so as to exercise moderate compression. Ordinarily no change of dressing is required, the healing process going on uninterruptedly. When suppuration does occur, the upper layers of the wadding are removed and dry powdered salicylic acid is sprinkled over the surface, a fresh layer of wadding being then applied over this.

TREATMENT OF DIPHTHERIA BY CYANIDE OF MERCURY.—Dr. Rothe (*Deutsche Med. Wochenschrift*, 1881, p. 467) reports thirty-four cases of diphtheria successfully treated. He uses the cold pack, hourly changed, thrice daily, rapid pencilling of the gums, etc., with the following:

R Acid. carbolic., pt. j;
Spir. vini gal., pt. j;
Tincturæ iodini, pt. j;
Glycerinæ, pts. v.

Internally, the following:

R Hydrarg. cyanid., centigr. 0.01;
Aque destillat., grm. 120;
Tinct. aconiti, grm. 1. Misce.

Sig.—Dessertspoonful every hour. For young children the dose is to be proportionally diminished.

TREATMENT OF CYSTS.—E. Schilling (*Allg. Med. Central Zeitung*) recommends, for the removal of cystic tumors where the cyst-wall is so thin that it cannot be removed by the knife without great difficulty, injections of solution of chloride of zinc (one part to five parts of water). The cyst is first opened by means of a long incision,

and, the soft contents having been squeezed out, a few drops of the solution of chloride of zinc are injected by means of a syringe. The reaction is slight. In one case Schilling squeezed out the macerated cyst without difficulty at the end of six days.

TREATMENT OF ERYSIPELAS BY COLLODION.—Darlan (Thèse de Paris, *Bull. Gén. de Thérap.*, vol. ii., 1881, p. 239) brings forward this treatment again. He says that it prevents the spread of the disease and lowers the temperature. The good effects seem due to its compressive action, which interferes with septic absorption. The affected part, especially if a limb, should be surrounded by a zone of flexible collodion, which should be painted on fresh daily. The usual treatment is to be simultaneously pursued.

POWDER IN MIGRAINE.—

R Quinidiæ sulphat., gr. xxiv;
Caffeini,
Acidi tartarici, aa gr. xvj;
Morphiæ, gr. viij;
Sacch. alb., ʒijss. M.

Powder, and divide into five equal parts, —one to be taken morning and evening alone or in a cup of coffee without milk.

EXCISION OF CHANCRE.—At the recent International Medical Congress, Dr. Louis Jullien presented a paper in which he related some experiments he had made in the excision of chancres for the prevention of systemic infection. His conclusions were as follows. 1. The excision causes no local trouble: the wound, perhaps, heals a little slowly. 2. Under certain circumstances, excision suppresses all subsequent manifestations. 3. In cases where it fails to do this, its operation is still advantageous, the subsequent disease being milder and more slowly developed.

SMALLPOX AND ANTI-VACCINATORS.—The wickedness of encouraging the anti-vaccination agitation could not, it is opportunely pointed out by the *Globe*, be more strikingly proved than by an account it printed of the origin of an outbreak of smallpox in Rotherhithe. "A leading anti-vaccinator," Escott by name, who had had none of his children vaccinated, has lost his wife and two children by smallpox, and four others have had the disease. Escott borrowed a suit of mourning from a friend named Angus, to attend his wife's funeral, and returned the clothes without disinfection, with the result that the lender caught smallpox and died. Since then, nearly every house in the neighborhood has been attacked, and sixteen patients have been removed to hospital.

PHILADELPHIA MEDICAL TIMES.

PHILADELPHIA, DECEMBER 3, 1881.

EDITORIAL.

MEDICAL REGISTRATION ACT.

IN a recent editorial we criticised the charge made by the college faculties of this city for endorsing the diplomas of graduates of medical schools outside of the State who desire to practise in the State. Further information has led us to modify this opinion, and we now believe that our medical schools are justified in exacting this fee, if, as we are informed, they so read the law that they consider themselves bound to give a formal examination before endorsing any medical diploma. This reading is probably a correct one, although the law is expressed so badly that no one can say with certainty what is meant, unless he be indeed a judge in the court of last appeal, or perhaps the whole bench of judges.

The section reads,—

"Any person who may desire to commence the practice of medicine or surgery in this State after the passage of this act, having a medical diploma issued, or purporting to have been issued, by any college, university, society, or association in another State or foreign country, shall lay the same before the faculty of one of the medical colleges or universities of this commonwealth for inspection; and the faculty, *being satisfied as to the qualifications of the applicant* and the genuineness of the diploma, shall direct the dean of the faculty to endorse the same, after which such person shall be allowed to register as required by Section 2 of this act."

Supposing the interpretation of this section adopted by the medical faculties is correct, what can be said of the ignorance, carelessness, or culpability which has thus given over the profession, bound hand and foot, to the medical colleges? Any proper legislation must recognize the fact that the interests of the colleges and of the profession are antagonistic, whilst those of the profession and people are in accord. The interest of the profession, in its present overcrowded condition, is that as few men

as possible shall enter it; and the interest of the people, that these men shall be thoroughly prepared. The profit of the schools is found in opening wide the doors, calling in the crowd, and rushing through the mass who pay professors but do not learn their profession. As well give to the lamb the wolf for protector, as to frame, for the good of the people and the good of the profession, a law which strengthens the medical colleges and enables them with more *éclat* and ease to send into the community those who have paid their fees and know nothing.

The section of the act under discussion is further injurious to American medical interests in that its tendency is to check the growth of great medical schools, where acknowledged excellence of teaching and difficulty of attainment shall give value to the diploma and draw men from all parts of the Union. If one State adopts such a law, others certainly will follow. We believe that in Alabama a similar act exists. In that State there may be some petty medical schools unknown to us, but the only one reports of whose existence have come to our ears is one in Mobile,—a chartered institution of the lowest class. Yet, forsooth, the diploma of Harvard University must be revised by its faculty! We do not mean to reflect in any way upon the action of this faculty. But suppose it were composed of dishonorable men. What a power is placed in its hands to force students of medicine to enter its halls rather than the great distant metropolitan schools!

There is one mass of evidence which, if the United States government could only be induced to publish it, would, we believe, make such an outcry as to lead at once to proper legislation for the protection of the community from the colleges. We allude to the reports of examinations, during our war, for the position of Assistant-Surgeon of Volunteers.

This subject of medical education has

been written upon *ad nauseam*. But surely the State Medical Association ought to listen a little longer,—even ought to tarry until it can appoint a committee who shall see that a medical act framed by the Legislature is not so framed as to injure rather than benefit the profession.*

INDEX MEDICUS.

THE editorial which appeared in a late issue of this journal upon the Index Medicus seems to have answered well its purposes in stirring up the subject and calling support to the journal. Among other results, it has brought a letter to us from the publisher, which, in order that attention may be attracted to it and any possible injustice avoided, we insert in this editorial column.

TO THE EDITOR OF THE MEDICAL TIMES, PHILADELPHIA, PA.

DEAR SIR,—Allow the publisher of the Index Medicus to thank you, on behalf of that publication, for your earnest and timely words in the *Medical Times* of November 5; but, lest some of your remarks may be misinterpreted, allow him also to state, in justice to those concerned, that the reproach of "has done nothing" cannot properly apply to the cities of New York and Boston. It is true your remark only refers to the work of the organizations, in which Philadelphia has so prominently taken the lead. But, while New York and Boston have not yet succeeded in carrying out the Philadelphia plan of co-operation, it should not be overlooked that (a fact of which you evidently were not aware) the *individual* support in both cities has been proportionately more than that of any other place. Boston in particular has distinguished itself by a number of liberal private contributions. The following is an approximate percentage of support, representing subscriptions, contributions, and appropriations:

United States (exclusive of other mention, as specified below)	27½
New York City	22½
Boston	16
Philadelphia	12½
Government departments	11½
Foreign countries	10
	100

This schedule shows that (Philadelphia and the Government departments excepted) Boston and New York alone contribute more than all the rest of the world.

The publisher, however, agrees with you that, although "the ordinary general practitioner may not have much im-

mediate use for the Index, to the literature of the profession the book is an immense necessity;" and, on this very ground, he has addressed his last appeal to representative bodies rather than to individuals. If the main object of medical organizations is the furtherance of medical interests, in obtaining by association and co-operation what is not within the scope of individual efforts, then it is within the province of the medical societies to bear a share in the support of a publication which, although of direct use only to a limited number of workers, becomes, through these very workers, a practical benefit to the whole profession. As these individual workers already pay their full share toward the support of the publication, the *society* is only approached in order to give its members the opportunity for contributing that mite which may be temporarily required to make up the sum total, and which no one will refuse who has the furtherance of medical interests enough at heart to belong to a medical association. And no one who has the furtherance of medical interests at heart can to-day be unaware of the existence and significance of the Index Medicus, so thoroughly has the publication been brought before the profession, particularly through the medical press in the United States and England. The Index Medicus is, as you say, "a necessity" which, if not provided for by the present generation, must be met sooner or later. It is a credit to this country that it has laid the foundation; but the credit will belong to that country which will support the permanent structure.

Yours truly,

F. LEYPOLDT.

Of course we had no way of knowing how the comparative individual subscription-lists stood. It is plain that Philadelphia physicians should be incited to subscribe more widely, and that societies in other cities should also be stimulated to do their duty. In one point we are forced to differ with Mr. Leypoldt, and that is as to the advertisement of the Index Medicus. Europe ought to pay half the bill of support at least; but it does almost nothing,—largely, in our opinion, because the Index has not been properly made known. We have talked with medical men of world-wide renown abroad, and found them ignorant of the existence of the journal,—in part, no doubt, the result of their own lack of enterprise. But the publisher should see that men know of the Index, whether they are purblind in the direction of America or not.

THE YOUNG DOCTOR IN PUBLIC CHARITIES.

ONE of the pitfalls which beset the young practitioner at the beginning of his career is that which takes the spe-

* Since the above was written, we learn that the University of Pennsylvania has decided not to examine as to the qualifications of would-be practitioners, but simply to give a letter as to the genuineness of the diploma, and for this service to exact no fee. Upon such a letter the prothonotary of this city has allowed registration. The Jefferson Medical College still, we believe, adopts the course spoken of in the editorial.

cious guise of an appointment as physician to some public institution of a charitable nature. Well-meaning friends suggest the advantageous character of the position of attending physician to the "Rheumatic Home," and the young doctor, fondly dreaming of the influence which he may gain in the board of lady managers by his assiduous care of the unfortunate inmates, and of possible openings in practice accruing therefrom, permits himself to be nominated to the first vacancy left by some older and wiser man. Now his troubles begin. Summoned at odd times for the relief of a bronchitis or neuralgia, he prescribes with satisfaction to himself and more or less benefit to the patient, and all goes well for a time. Suddenly, however, a graver emergency arises. A case of mild and typical typhoid fever appears. He calls, prepared to give the usual and formal directions, and finds himself confronted with the visiting-committee of old ladies, to whom his diploma and hospital residence count little in such a serious case. He is beset with suggestions, and scarcely leaves without the insinuating remark being made that it might be advisable to call in an older man. Perhaps, and most likely, he yields. Dr. Jones, the family doctor of the President, is duly called, and confirms diagnosis and treatment; but the young man's prestige, or what he supposed to be such, is gone. He sinks to a lower level than the nurse. The consultant is waylaid for his opinion and is called upon at his office, and the poor attendant's occupation is gone. Or he decides, with hardy reliance on his own skill, to go on without consultation. Worse then is his fate, for behind his back go on consultations worse—far worse—for his reputation than the open one which was the alternative. Finally, most likely, a consultation is forced upon him, and he is in the humiliating position of nominal-physician attendant, but only to be trusted when there is nothing much the matter.

What young man recently started in practice, and who has unwarily gone in for a position in a "home" or "institution," could not give account of such humiliations passed through? Within the past few months a case has come under our notice in which the physician to a home passed an applicant as free from contagious disease, who was incontinently turned out of the institution neck and heels the next day because the *matron* "thought he had ringworm."

Theoretically, the physician gives his valuable services in these cases to the sacred cause of charity; practically, he goes out for wool and comes home shorn. The ladies, who from various more or less exemplary motives devote their spare moments to running charitable institutions, class the young aspirants for medical positions in the same category with the colored practitioner who bore upon his cellar-door shingle the legend, "Dr. Cæsar Smith, Physician and Surgeon, and *very good in mild cases*." To the young physician contemplating the assumption of such a position, with the delusive hope of enhancing his reputation or getting a foothold in the families of the managers, or in any other way bettering his fortune or improving his prospects, we would say, Pause and reflect. Under the pretence of attending the poor and afflicted for charity, you are about to make an honest effort to improve your professional position. Your motives are judged by those to whom you apply at their true value, and you may rely upon it that you will not be permitted to make anything out of your position which will render it worth your while to occupy it. Disappointment, and perhaps humiliation, await you. Better to go in honestly for some position where you can frankly pursue your object, whether it be study or practice, and postpone until your waiting-room is crowded with patients the offer of your gratuitous services—then of a real market value—to the cause of charity.

LEADING ARTICLES.

THE ROYAL HOSPITAL FOR CONSUMPTIVES, AND THE CLIMATE OF VENTNOR, ISLE OF WIGHT.

(Continued from page 119.)

THE hospital is composed of eight blocks of handsome houses, two in each block, and sixteen in all, a fine church standing in the centre. Each house has spacious accommodations for six patients, each patient having a comfortable room. The houses are three stories high, the two upper stories being composed of chambers all of which face to the south. In the rear they open upon a passage-way or hall. Upon the lower stories are dining- and sitting-rooms and offices. The only communication between the houses is a sub-way which runs from end to end and by means of which each block is supplied from the one general kitchen. Externally two balconies extend from one end to the other on the southern side and facing the sea. The chambers open upon the balconies by means of French (swinging) windows. The lower balcony is roofed by the upper, and affords a sheltered promenade for patients on rainy days. The grounds comprise one hundred and twenty acres, six of which are devoted to lawn and garden and are very charming. The remainder serves the purpose of raising vegetables for the use of the hospital. Patients have all the comforts and conveniences of home, in the place of being congregated in wards in one large building and subjected, in consequence, to the depressing influences to which allusion has already been made.

Queen Victoria is patron of the hospital, and has been a liberal contributor to the fund of the charity. The first block was completed in 1869, and the corner-stone of the second was laid by the Princess Louise on behalf of her mother, and opened to patients in 1871. In some instances a house has been built and fitted throughout at the expense of one person; and these houses have been named after their donors. In connection with the hospital is a commodious hall, used for entertainments.

The annual amount required for the maintenance of the hospital is £6000 (about \$30,000). This amount is secured in part by voluntary subscription, in part by the weekly payment of each patient (10 shillings, or \$2.50). This insignificant

fee is raised for patients who have no means by their friends or by societies of which they are members. This is a wise arrangement, for, without excluding even the very poor, it not only adds to the income of the hospital, but spares patients the injurious effect which is exerted upon human beings by all charities.

On entrance, each patient is required to pay a guarantee fee of one pound, and the weekly stipend is paid four weeks in advance. Unless any portion of it be forfeited for damage done, the guarantee is returned when the patient leaves the hospital.

All patients are obliged to bring a medical certificate of eligibility and a letter of recommendation from one of the governors of the hospital. If a period of four weeks elapses after candidates have been registered, they are obliged, when their turn for admission comes, to send in a letter from a physician stating that their cases are as eligible as when the medical certificate was first forwarded.

Those who apply for admission must be in a *necessitous* condition and not be able to defray the entire cost of maintenance and treatment. Cases eligible for admission are those in an *incipient* stage of disease, or which have become arrested if in the later stages, and which therefore afford a reasonable expectation of marked alleviation or recovery.

If after the lapse of ten weeks the physician should deem a longer stay desirable, the patient is obliged to procure a new letter of recommendation. Patients are required to conform strictly to the rules framed for the internal management of the hospital. Their diet-list is a fixed one for every day of the week. Departures from it are allowed only in special cases, and are then ordered by the physician. Every patient drinks milk at 8 A. M., after which breakfast follows, and during the day are furnished lunch, dinner, tea, and later supper in the English fashion.

Patients who are able are obliged to go out of doors every pleasant day and walk a prescribed distance. The climate allows much lounging in the open air. The chaplain is required to attend the hospital daily, in the interest of such patients as may wish to speak with him.

Now, as to what has been and is being accomplished. For example, the hospital statistics show that during the years 1870-

73, 474 patients were treated. Of these 122 were discharged as "improved;" 161 "much improved;" 83 "very much improved;" 28 "restored;" 34 in "unchanged condition;" 22 "worse." There were only 24 deaths. The gain in weight of the whole number amounted to 2112 pounds. Those who lost in weight did so to the amount only of 286 pounds. This typifies the benefit derived at Ventnor. During the year 1874-75, 619 cases were admitted. Of these 130 were "improved;" 122 were "much improved;" 167 "very much improved;" 41 "restored;" 94 "remained in the same condition;" 37 "became worse;" "only 31 died." The gain in weight amounted to 2117 pounds. These statistics indicate remarkable improvement.

As Hassall remarks in his book, "It is impossible to bestow too much care and thought upon the choice of a suitable climate for the phthisical. The nature of the climate must of course depend to some extent upon the character of the case." The statistics I have quoted are given by Hassall to show the benefit which lung cases may derive from a residence in an even temperature, in a suitable climate, when combined with appropriate treatment, regimen, and hygiene.

The number of patients admitted to the hospital at one time is limited; but this does not prevent the use of the town as a winter sanatorium. Many Americans spend the winter abroad because of weak lungs or hearts. In perhaps the majority of cases they would prefer to live in an English-speaking town instead of on the shores of the Mediterranean, to reach which costs more money, more time, and greater fatigue, and, moreover, includes the rough passage across the English Channel. One object of this paper is to show that comparatively close at hand we have a winter resort with the advantages of which American physicians are not sufficiently familiar.

The position and setting of Ventnor strikingly remind one of San Remo, a famous resort of consumptives. Ventnor looks towards the south, and lies at the base of a range of high hills, which enclose it on the northern and western sides in the form of an amphitheatre and protect it from the winter winds. A beautifully picturesque town, consisting of "a medley of every possible known and unknown order of architecture, strewn broadcast. All

these houses seem to have dropped into their places, just as the spectators at a Roman amphitheatre may have dropped into theirs; and they crowd and jostle and peep out one above another, seeming to have a unison of design only in one particular,—to have a good look at the sea. Break-neck precipices and zigzag roads, at every alarming angle of declivity, intercept the labyrinth of houses, which stand (to all appearance) on each other's heads or look over each other's shoulders, and settle down on rocky ledges out of which are scooped baby gardens of more than a baby's loveliness, where fuchsias and geraniums grow into trees, and myrtles and heliotropes brave the ethereal mildness which characterizes the fiercest winter, and where the hawthorn has been known to bloom at Christmas." (Cuthbert Bede.)

The quaint town, beginning thus quite in the heart of the hills, wanders, with a sweet wilfulness of the most artistic nature, down between the open jaws of huge, bold cliffs, into the very sea. Excepting this interval, these cliffs overhang the sea, east and west, as far as the eye can reach. The path along the verge of the cliffs is the favorite haunt of pedestrians, and along the beach is a superb marine promenade.

The town is a little paradise of quaintness, picturesqueness, and beauty, from its queer thatch-roofed Norman cottages to the elegant villa, and from its velvety lawns to huge hill and ragged cliff. The roads are macadamized and excellent; drives are charming, and excursions, every one of which becomes a delightful memory, abound in all directions. Saddle-horses, donkeys, and carriages of all sorts, from the comical "midge" to the gay four-in-hand mail-coach, may be engaged at reasonable rates. Shops are very good; there are several circulating libraries; pianos may be hired; row-boats are abundant; there are churches of nearly every denomination. In short, the town offers agreeable variety to the visitor. To live in the hotels, several of which are unexceptionable, is expensive. The wiser way is to engage rooms in one of the many houses which make a business of entertaining strangers. The women cook and keep house, and the husbands serve at table. Food is of the best, and the price of board is moderate. A party should hire a villa. Concerning the climate of Ventnor, it can be said that this side of San Remo there

is nothing like it abroad in mildness and equability.

Sir James Clark was the first to call attention to the peculiar advantages of the Undercliff (another name for the place). He says, "It is a matter of surprise to me that the advantages it possesses, in point of shelter and position, should have been so long overlooked in a country whose inhabitants, during the last century, have been traversing half the globe in search of climate."

Dr. Martin, a resident, who has done much for Ventnor, writes, "The undulating character of the ground and the free exposure to the sea prevent that stagnant condition of the atmosphere so frequently met in sheltered localities, and hence the lightness and invigorating quality of the air. Hence also probably springs the immunity the Undercliff enjoys in the non-spreading and absence of epidemics for which it is remarkable, and which have won for it the proud distinction in the reports of the Registrar-General of being absolutely the healthiest place in England."

Another authority, writing on Ventnor and Bonchurch (a suburb), says, "They form part of an island of small size, around which the sea flows freely, so that there is a breeze from the ocean to temper the summer heat, and the influence of the Gulf Stream to moderate the cold in winter. The result is that there is a more equable temperature than in any other part of England." The mean maximum temperature for twenty-five years was 77.2°. The mean minimum temperature for the same period was 25.1°. "Possibly, take it all in all," says the same authority, "as a winter sanatorium Ventnor has not its like even on the Continent; for the effects of the Gulf Stream on the water which flows around the Isle of Wight are not in action on the villas which stud the shores of the Mediterranean. Every fortunate circumstance seems to constitute the Undercliff one of the most favored sanatoriums on earth, and to render it the resort of consumptives *par excellence*."

The climate of Nice and Cannes has for years been recommended as beneficial to consumptives,—an error which one may quickly discover by living in either place. Mr. Aspinall writes of this climate as delightful, the air being clear and exhilarating,—“like a summer's day iced,”—but

very treacherous; “for, after being overheated by the hot sunshine, you constantly meet bitterly cold winds sweeping through the gorges of the snow-mountains at the north.” A room with a southerly exposure is a *sine qua non*. One street is oppressively warm; in another one needs an overcoat. The winds are excessively changeable, there being sometimes four or five variations in one day. C. T. Williams, Prosser James, and other English writers endorse this opinion; and Dr. Walshe sums up his observations of the effect of this climate in general phthisis by saying, “In no stage, in no degree, in no form of tuberculization of the lungs, and no matter what the temperament of the individual, is Nice (and therefore Cannes) a safe winter resort. The climate is most dangerous in cases with hæmoptotic and laryngitic tendencies. Nice is delightful for those in health.”

San Remo, according to all authorities, being mild, dry, equable, and fully protected from northern winds, and hence sudden changes of temperature, seems to possess a climate very suitable for ordinary phthisis,—that is, for cases unaccompanied by a tendency to hemorrhage or inflammatory deposit. But even in San Remo the patient must dwell in a part of the town to which he should be directed by a resident physician. Being hilly and mountainous, it is unsuited to heart-disease, also to those liable to cerebral congestion or apoplexy. In San Remo the rainfall in forty-eight days of one year was 28.78 inches; in Ventnor, during one hundred and fifty-six days of a single year, only 34.54 inches. In the latter the mean annual temperature in two years was 51.95°; in San Remo, 60.13°; and during the winter season, 51.55°.

These facts plead largely in favor of Ventnor, especially so since it is nearer home, is less expensive, and is English. Of course there are winters during which Ventnor experiences unusual cold, and last winter, in common with England at large, it had heavy snow-storms. But these are rare exceptions, which apply equally to San Remo and the Riviera.

This information, it is hoped, will lead American physicians to make frequent use of Ventnor for such of their chest cases as wish and require a winter abroad. It need scarcely be said that advanced cases of phthisis should rarely, if ever, be sent

away from home. This is a short-sighted policy. Change of climate for consumptives is beneficial mainly because patients in the proper air can live out of doors. Serious cases, as a rule, should be allowed to die at home.

To add further statistics in connection with Ventnor, it may be said that during ten years the mean temperature of the coldest month (February) was 41.12° F.; average winter temperature, 41.80° ; average number of rainy days, 73.3; average rainfall, 25.94 inches (October giving the most). The southwest is the prevalent wind, blowing 96.97 days.

The editor will gladly give further information to those who desire it. Those physicians who may wish to correspond directly with Ventnor should address Dr. J. G. Sinclair, Coghill. This gentleman is the leading physician of the town, and visiting physician to the Consumptive Hospital.

Details of this institution have been given in the hope that similar hospitals may be erected in proper localities in our own country.

The remarkable success which attends the system pursued at Ventnor should receive serious consideration. Patients who upon leaving this hospital are recommended to remain, if possible, in the Undercliff, but who have not sufficient means to do so, are aided by a fund established and maintained by residents of Ventnor. Incurable cases which cannot be retained by the hospital are aided by the same fund. All these patients are visited in their lodgings by the ladies of the committee, receive gratuitous advice from the physician to the hospital, and attendance from a clergyman of their own denomination.

BACILLUS TYPHOSUS KLEBSII.

THE advocates of the germ-theory again claim an important result, and this time none less than the detection of the cause of typhoid fever, a result due to the laborious work of the great German investigator, Edwin Klebs, who, after years of patient study, has at last finished his experiments and observations regarding the origin of enteric fever,* and of which

we will give our readers a *résumé* in the following.

According to Ferd. Cohn, Eberth, Klebs, and others, all low organisms which are found as filiform formations and contain in their interior germ-spores belong to the group of bacilli. Eberth, when investigating, about a year ago, the microscopical appearance of some Peyer's plaques of a case of typhoid fever, saw already small, short, thick, rounded rods, some of which contained one to three spores;† but Klebs has been the first who detected in the larynx and in the intestines‡ larger rods, jointed threads, forming long crowded tracts and even a narrow net-work, penetrating whole tissues, and who explained their true character. The difficulty which so far always existed regarding the establishment of the fact that these low organisms, the bacilli typhosi, are the cause of typhoid fever, had been that some investigators had found pathological specimens of cases of abdominal typhus containing no bacilli, while others, again, had observed the seemingly same bacilli in different diseases. But Klebs has fully explained these apparent contradictions. According to the day of the fever on which the individual affected with it died, these bacilli are often absent at certain places, but found in others; further, depending upon their stage of development, they assume different forms and shapes; and, lastly, many precautions have to be taken, in preparing the pathological specimens, to enable the investigator to detect the bacilli. If the necessary precautions are observed and the different stages in the development of the bacilli are known, the latter are affirmed to be invariably found. Further, Klebs has proved another important fact, hitherto unknown,—viz.: many of these low organisms will present at a certain stage of their development, with our present power of magnifying and means of investigation, a very similar appearance; but if their development is watched there will appear a great variance between the different kinds. If instead of a culturing fluid a solid gelatin culture-mass is taken and sand strewn finely over it, and if now the different low organisms are implanted thereon, then one kind will develop always

* Archiv für Experimentelle Pathologie und Pharmacologie. Von Edwin Klebs, B. Naunyn und O. Schmiedeberg. Band xlii. Helt v. and vi., March 22 and April 26, 1881.

† Virchow's Archiv, vol. lxxxi, p. 58.

‡ Whenever we speak of Klebs's investigations, we refer to the article quoted above.

in heaps, one will draw itself out in thread-like masses, one will assume invariably a star-shape, another form a beautiful network, etc. Further, these low organisms are recognized from each other by their different shape in every stage of development and by the way they enter the tissues. The investigations of Klebs have lasted almost sixteen years; but after he had acquired the knowledge to differentiate each species of *Schistomycosæ*, and perfected the mode of detecting them, and when he knew where to look for them, he had no trouble in proving the presence of the bacillus typhosus in every case of typhoid fever.

The bacillus typhosus enters the system by the respiratory passages and by the alimentary canal. This is the cause that in some cases of typhoid fever almost no abdominal symptoms are present, but a low form of pneumonia developing from the very beginning, so that the lung seems alone to bear the brunt of the disease. In such a case the bacilli have entered by the air-passages, and from there they reach, by the arterial blood-channels, the follicles of the intestines, as well as the other lymphatic apparatus and the spleen. On account of the greater continuous natural irritation and the greater proliferation of cells there, they accumulate more frequently in Peyer's plaques. In the second Prague epidemic, forty-three per cent. of the dead had almost alone the lung-complication, while the intestinal affection was very little developed. Klebs gives the result of the careful dissection of several such cases. Mostly, however, the bacilli enter by the alimentary tract, being swallowed with the food or water, or having collected on the mucous membrane of nose, mouth, and pharynx, with the saliva, and then accumulate first in the large masses of epithelial cells found on the mucosa of the intestines. As long as the typhoid process develops itself progressively in the plaques, bacilli are found there. There exists the closest connection between the development of the bacilli in the organs and the morbid alteration of the tissue of the latter. Their presence is so constant wherever there is a lesion, commonly called a complication, that it is sufficient proof of their genetic importance. Development of bacilli and of morbid tissue-alteration run parallel to each other.

According to the observations, the life of the bacillus typhosus in the intestines

reaches its acme within fourteen days; then rapid retroformation takes place, the cells, which have accumulated in enormously great masses, undergoing fatty degeneration and acting as destroyers of the bacilli. All later disturbances are either due to further progress of morbid tissue-change once begun, or depend upon new development of bacilli in the intestines or somewhere else. As mentioned above, the bacilli inhaled go frequently directly to the lungs, but in most cases they are retained on the mucous membrane of nose, mouth, and pharynx, and swallowed with the saliva. The first morbid alterations they produce appear, therefore, either in the intestines or, as was observed in some epidemics, in the lungs. In either of these organs the development of spores immediately begins, and these are carried by the blood-vessels or lymphatics to other organs, where a rapid new formation of bacilli commences. So they have been found in the pia mater, giving origin to nervous phenomena. And the severer the complication was during life, the greater was the accumulation of bacilli in the organ affected. In persons who had been so overcome by the intensity of the poison (as formerly expressed) as to die at the very outset with cerebral symptoms, as convulsions, stupor, and coma, oedema of the pia mater existed, and in the hollow spaces of this membrane immense quantities of the small rods and threads characteristic of bacilli were found. In subjects having died from other diseases with the same symptoms there was frequently seen a similar oedema, but bacilli were never present. While the morbid condition of oedema and inflammation of the lungs, for instance, was the same in cases of sepsis and scarlatina and typhoid, in the first two maladies micrococci were found, but in the latter invariably the same rods and filiform bodies with spores of the bacillus typhosus. Epinger has seen, in cases of ulceration of the larynx in typhoid fever, the infiltration of the mucous membrane and of the cartilage with bacilli masses. As a great number always collect on the mucous membrane of the pharynx, we have an indication for the frequent use of disinfecting gargles. The capillary hemorrhages which are so frequently found in enteric fever in the heart, lungs, kidneys, in the skin, and in the alimentary canal and urinary passages, have their origin in the fact that the

bacilli collect first in the capillary vessels, then an accumulation of blood-corpuscles takes place, the vessels dilate, and we have a stasis, followed by capillary hemorrhage and perivascular infiltration of masses of newly-developed bacilli.

Another cause which made many hesitate in believing the existence of the bacillus typhosus was the difficulty which investigators experience when trying to produce a disease of human beings on animals; but they should have thought of the different action of poisons on different races even of the same species, as Chauveau long ago has proved with his experiments on sheep. Besides, the bacillus typhosus produces in men as well as in animals, if the infection is correctly performed, the same morbid changes,—viz., the following. There is at first a general catarrh of the mucous membrane of the alimentary tract. The epithelium becomes opaque, and desquamation of large masses of epithelial cells takes place. In these cells are found the little rods, with frequently one end spore and one central spore, which latter seems to be the division-point where the spore, making its exit, forms a new bacillus. Later, diffuse swelling of the different layers of the mucous membrane sets in, especially near the ileo-cæcal valve (undoubtedly in consequence of its deeper position and the arrest of locomotion of the contents there). The microscope shows now an infiltration of the whole mucous membrane at these places with the small rods. At the same time their further development into small threads is observed, many of which are at the end beautifully twisted around themselves, and some of them containing many spores. Their greater thinness, length, and the twisted form distinguish them clearly from septic organisms. After this they penetrate through the follicles of Lieberkühn, where they do not collect in large masses, but do so in the subglandular layer of the mucosa. They infiltrate Peyer's plaques, the solitary and mesenteric glands, and especially the tissues surrounding all these, and are from there carried farther by the veins and lymphatics. With the longer duration of the disease, and in case of relapse, the threads become longer and the number of spores increases, the latter showing themselves as dark spots. Especially perivascular infiltrations, with destruction of the walls of the vessels, are now observed. If the microscopical prepa-

rations are stained in a certain way,—the description of which would here occupy too much space,—and at this stage of full development and acme of growth of the bacilli, the latter assume a blue color, and whole tracts of them appear as a beautiful blue network; but the same procedure never has this effect on any other known organism or on any tissue. The destruction of the latter by the bacilli is as follows. First, the protoplasm of the cells is invaded by them and disappears, then the nuclei are attacked, then whole cells; after this infiltration and destruction of the tissue, leaving of this only some areolar-tissue fibres and parts of membranes of vessels and a few elastic fibres, so that we have a process of necrosis of tissue which is in direct opposition to that which is induced by the cutting off of the blood-supply by hemorrhagic infarctions, as we find it, for instance, in the kidney in true diphtheria (Weigert). But there is further destruction of tissue observed at a certain distance away from the parts infiltrated by the bacillus typhosus. This is due to the fact that from all bacilli a dissolving fluid oozes out, which penetrates the neighboring tissue, so that we have not only destruction of tissue by the mechanical action of the bacilli-masses, but also in the neighborhood a chemical one by the fluid mentioned.

Klebs made a large number of experiments on animals, but one on a rabbit was especially successful, which was performed under precautions which seem almost too laborious for any man to undertake, where by infection with the bacillus typhosus exactly the same morbid condition was produced in the rabbit as is invariably found in cases of typhoid fever in men, and where the same clinical picture exhibited itself.

To recapitulate: Klebs claims that he has proved that there exists in typhoid fever a separate and special bacillus,—the bacillus typhosus; that it undergoes certain transformations, consisting at first of little rods and small, fine threads, containing a spore in the centre and often at the end (which spores divide off and form new bacilli); it later assumes a longer, thread-like form, twisted at the end and frequently taking a beautiful, spiral shape; that the bacilli are observed first in the masses of epithelial cells, which accumulate in the alimentary tract or in the air-passages; that they later penetrate the tissues

and are carried along by the blood-vessels and the lymphatics and form a large network among the tissues they invade; that under a certain procedure, which never causes this same staining on any other living organism or tissue, they appear of a blue color; that they are found only in enteric fever, in which disease every part of the human body is the seat of masses of these bacilli, their quantity corresponding exactly with the severity of the symptoms; and that they produce, when carried into the system of animals, exactly the same disease with the same morbid alterations as typhoid fever in men.

But Klebs believes that he has done more than this. He has proved by a number of dissections that the cold-water treatment influences the disease very little, but produces rather damaging results in a majority of cases. Further, he has given us a remedy which decidedly influences and shortens the disease, and that is the benzoate of sodium or magnesium, used as a gargle, by inhalation, and internally in doses of three hundred and twenty grains per diem. He cites a case in which he especially had opportunity to observe the effect of the medicine. A physically very strong man, who worked in his laboratory the whole day, and was most of his time engaged with the culture of the bacillus typhosus, became affected with typhoid fever in what promised, to all appearances, to be a very aggravated and serious form. After nine days of treatment with twenty grains of benzoate of magnesium daily, all the symptoms and all fever left the patient, and a rather remarkable weakness was the only symptom he complained of after that for some time.

Klebs recommends the benzoate instead of other similarly acting remedies, as salicylic acid, carbolic acid, etc., etc., because the benzoates alone can be given in doses large enough to keep up a continuous disinfection without producing any disagreeable symptoms, which would necessitate a smaller dose or the total omission of the remedy, as is so frequently the case with either salicylic or carbolic acid.

HUGO ENGEL.

NITRITE OF AMYL is claimed (*British Medical Journal*, October 1, 1881) to act excellently in chordee and painful erections. Three to five drops by inhalation is the dose.

REVIEWS AND BOOK NOTICES.

GENERAL MEDICAL CHEMISTRY FOR THE USE OF PRACTITIONERS OF MEDICINE. By R. A. WITTHAUS, A.M., M.D. Wm. Wood & Co., New York, 1881.

We have here what is in many respects the best work on medical chemistry in the English language. It is not merely a general chemistry, with here and there references which are supposed to adapt it to the use of medical men, but it is written directly for them by a teacher of medical chemistry. As the author says, "those portions treating of technical processes have been condensed to a minimum, while the bearings of chemistry upon physiology, hygiene, therapeutics, and toxicology have been treated of as fully as the limits of the work have permitted."

We must also commend the author's general arrangement of the subject. He drops the old arrangement of the elements as metals and metalloids, as unscientific, and classifies all the elements, including carbon, in groups according to their equivalence, placing, however, the electro-negative or acid-forming elements first, and then the electro-positive or basic elements. In his effort to carry out this system of classification to its logical conclusions, he is a little too positive in several instances. Thus, he puts zinc in Class IV. (elements whose oxides unite with water to form bases,—never to form acids), while aluminum is put in Class III. (elements whose oxides unite with water, some to form bases, others to form acids). Now, zinc placed in caustic alkali solution evolves hydrogen, owing to the formation of *zincate* of alkali, just as we find metallic aluminum dissolves, forming *aluminate* of alkali. This reaction with zinc forms the basis of Fleitman's modification of Marsh's test for arsenic, which, by the way, our author overlooks in his account of the toxicology of arsenic.

We are very much pleased at his presentation of the chemistry of carbon compounds, and agree with him that there is no need of erecting or maintaining an arbitrary wall of distinction between them and the compounds of the other elements. We like, moreover, the building up of the various organic compounds from series of hydrocarbons. He is here, however, too logical again, as he classifies the *terpines* along with *valylene* under the heading *hydrocarbons of the series* (C_nH_m), whereas the *terpines* yield decomposition products of the aromatic group and are undoubtedly more complex in molecular structure. The book is not entirely free from typographical errors, some of which are quite misleading, as, for instance, the word *mono-actin* for *mono-acetin*, on p. 277, and the use of the term *carbinol* as synonymous with methyl alcohol, on p. 168. It should be *hydrogen-carbinol*, just as, on the next page,

ethyl alcohol is correctly termed *methyl-carbinol*.

We decidedly object to the terms *air unity* and *hydrogen unity* and the corresponding abbreviations A. and H., on p. 36, as representative of the terms *specific gravity* and *density* applied to gases. It is much simpler to learn the distinction between these two latter terms than to speak of specific gravity (*air unity*) and specific gravity (*hydrogen unity*),—terms sure to give rise to confusion and mistake.

In general, however, as we said before, the book is the best work on medical chemistry that we know of in the English language.

S.

ARTIFICIAL ANÆSTHESIA AND ANÆSTHETICS.

By HENRY M. LYMAN, M.D. New York, Wm. Wood & Co., 1881.

We have looked over Prof. Lyman's book very carefully, and conclude that the worst thing about it is the very front of it,—namely, the preface. He therein informs us that there is nothing new or original in the book, and that the "work was performed without access to any library of importance." If these assertions were strictly true, what business had the Professor to write a book at all? We opine, none. But, in our sober judgment, they are not true: there is somewhat of novel and very much of well-garnered material in the treatise, which we would stamp with "good" across its title-page.

Of course we cannot assent to all contained in its three hundred and thirty pages of rather close print. We would file exceptions to the assertion (p. 15) "that all the substances which are thus capable of arresting the process of oxidation, without taking the place of oxygen or even excluding its presence in any marked degree, are substances capable of producing anæsthetic effects," etc. In one sense this may be true; but in the sense in which it would be generally understood and is applied to the argument it is not true. Nitrite of amyl is a volatile contradiction to it. We commend the doctor's rejection of the phantasies of Hammond and others in regard to the causation of sleep, and also his assertion that sleep is "the consequence of a certain stage of exhaustion of energy in nervous matter," for the idea which it is designed to convey, but not for its mode of expression. "Stage of" should be omitted altogether, or the word "degree" substituted. For a specimen of what seems to us bad reasoning, let the reader consult page 26; and for one of very happy thought, the last paragraph of page 47.

We have not had given us the task to follow further our author in detail, but we would call attention to the ghastly array of four hundred and ten chloroform deaths mustered for analysis. As there must have been nearly as many unreported as reported deaths, it is

plain that the space of one cemetery has been well filled by this treacherous agent.

Twenty-seven cases of sudden death are attributed to ether. We wish most heartily that the doctor had carefully analyzed these cases, for, to our thinking, in only a proportion of them was ether really the cause of death.

Space failing us, we dismiss the work before us with a hearty commendation and a hearty recommendation of it to buyers as the most recent and most valuable of its class.

THERAPEUTIC AND OPERATIVE MEASURES FOR CHRONIC CATARRHAL INFLAMMATION OF THE NOSE, THROAT, AND EARS. By THOS. F. RUMBOLD, M.D. Part II. St. Louis, Geo. O. Rumbold & Co., 1881. Pp. 467.

This volume completes the work announced by Dr. Rumbold in his "Hygiene of Catarrh." It closely resembles in style and typography the former publication, and, in the judgment of the reader, must suffer from the resemblance. It is unfortunate for science that while the author is recognized to be a conscientious student who has applied himself zealously to an obscure and, until recently, a neglected branch, he should not be better prepared for medical observation. The data on which his propositions rest are often unreliable, and the deductions drawn therefrom untenable. His most cherished convictions would be held by a well-trained worker as suggestive impressions merely, or, at best, as tentative hypotheses. But, after all regrets have been expressed, much remains to make this a welcome book. Dr. Rumbold is a safe practitioner, and one ingenious in the adaptation of instruments to the treatment of nasal and pharyngeal disease. His book is worthy of study on the part of all interested in these subjects.

A MANUAL OF PRACTICAL NORMAL HISTOLOGY. By T. MITCHELL PRUDDEN, M.D., Director of the Physiological and Pathological Laboratory of the Alumni Association of the College of Physicians and Surgeons, New York; Lecturer on Normal Histology in Yale College; Pathologist to the Manhattan Eye and Ear Hospital.

The above little book very fully carries out the design of its author,—viz., "the study of the science in classes, with an instructor in a laboratory." We would most urgently insist upon the presence of an instructor, not that the work is of itself superfluous, but it is an impossibility to give, in a book the size of the writer's, all the information necessary for the student. What the book does do, and does well, is that it tells how to go to work. The methodical manner in which the student is directed to proceed in his investigations will, if faithfully adhered to, give him a firm foundation for further histological studies. As a

practical guide for the beginner, and as an auxiliary for the teacher, the book will be found useful.

TREATMENT OF VARICOCELE. By M. H. HENRY, A.M., M.D.

Although the removal of redundant scrotum for the relief of varicocele is no new operation, yet we welcome the views of one who has had the confidence to persevere in it for ten years and then report his experience as based upon fifteen operations. Of these only four are of real value, since they are the only ones in which the result of the operation is positively known. One of these is especially noteworthy. It is that of a man upon whom Ricord had previously operated with the ligature; and to have relieved such a case by the reduction method is highly satisfactory.

We remember seeing Prof. Gross operate with the ligature upon a physician about 35 years of age, who had been operated upon twice before by the same method, and that, too, by different but skilful surgeons. What percentage of failures follows the ligature is not known, but it is not too much to say that the profession is quite ready for a substitute for it.

For the operation Dr. Henry has devised scissors and a clamp with two sets of parallel blades. The clamp is applied while the patient is erect, from before backward,—i.e., in the direction of the raphé; but retrenchment is by the scissors, after anæsthesia. Now will appear the advantages of the two sets of blades; for while one set is removed for the application of stitches, the other set holds the parts in apposition, prevents protrusion of pent-up parts, prevents hemorrhage, and renders an otherwise tedious, disgusting, and unsatisfactory operation almost bloodless and without embarrassment.

Another point of value. Nearly two-thirds of his cases united by first intention and were about in a week. The less favored were cured by the granulating process, and were well in less than three weeks.

The paper, which was read before the Academy of Medicine of New York, and first published in the *Medical Record*, May 28, 1881, is now neatly bound for fifty cents. The price of the clamps is ten dollars, that of the scissors five dollars, and they may be had of Tiemann, of New York.

A TEXT-BOOK OF PHYSIOLOGY. By M. FOSTER. Second American from the Third English Edition. By EDWARD REICHERT, M.D. Philadelphia, H. C. Lea's Sons & Co., 1881.

The editions of Prof. Foster's excellent text-book follow one another with encouraging rapidity; but, alas! so far as America is concerned, another man reaps where he has sowed. When will the law force publishers to be honest?

PRACTICAL ANATOMY. By CHRISTOPHER HEATH. Fifth Edition. Philadelphia, Pressley Blakiston, 1881.

This is a new edition of Heath's well-known dissector's manual. A few new wood-cuts have been added, and the number of colored plates increased to twenty-four. We notice that in the brain section the modern names of the convolutions are all given.

ESSENTIALS OF THE PRINCIPLES AND PRACTICE OF MEDICINE. By HENRY HARTSHORNE, A.M., M.D. Fifth Edition. Philadelphia, H. C. Lea's Sons & Co., 1881.

A new edition of Prof. Hartshorne's *multum in parvo*, whose peculiar position in literature was long ago taken.

A TREATISE ON THE DISEASES OF INFANCY AND CHILDHOOD. By J. LEWIS SMITH, M.D. Fifth Edition. Philadelphia, H. C. Lea's Sons & Co., 1881.

It gives us pleasure to announce the appearance of a new edition of Prof. Smith's excellent treatise.

GLEANINGS FROM EXCHANGES.

HYSTERIA AND THE LARYNX.—Dr. L. Thaon, of Nice (*Edinburgh Medical Journal*, October, 1881, p. 316), speaking of that form of hysteria which is localized in the larynx alone, says that it is found under four principal forms,—aphonia, spasm, anæsthesia, and hyperæsthesia.

Aphonia is not the commonest but is the most marked form. It is caused by paralysis of the muscles of the larynx. The muscles most commonly seized are the vocal muscles. Nevertheless, paralysis of the posterior crico-arytenoids is not absolutely rare, and he has known a case of this kind in which a hysterical female has been twice tracheotomized. A primary symptom of hysterical paralysis is that it is frequently bilateral, or else the paralysis is one-sided, but complicated with paresis or contraction of the opposite muscle. Thus, hysterical aphonia is often complete. It is, besides, a common enough occurrence, this diffusion of hysteria in organs which are impaired, and which are not symmetrical, as the ovaries.

A second symptom of hysterical aphonia is that it frequently gives a laryngoscopic image differing the one day from the other.

A third characteristic is to leave the cough intact, which even gains in intensity and breaks forth into roaring. We have even seen some cases of hysterical aphonia where the patient could sing, and some who could speak in their dreams.

Another peculiarity of this aphonia is the absence of muscular atrophy, notwithstanding a long duration of paralysis. It is still our duty to look for means of diagnosis in

the manner in which this aphonia conducts itself under treatment; in fact, whether it disappears at the slightest therapeutic summons, or after it has resisted all the resources of the art, at the end of a shorter or longer period, the aphonia disappears of itself on the occasion of a moral emotion more or less active. A fact which Thaon has often proved is the existence along with the hysterical aphonia of a patch surface of cutaneous anaesthesia on the border of the supra- and infra-hyoid regions. He has met with this symptom about twice in every five cases. Hysterical aphonia is cured by every method, or else it is a rebel to every form of treatment. From the simple introduction of the laryngeal mirror, which instantly causes the aphonia to disappear, to the subcutaneous injections of strychnia, all have succeeded or failed.

Spasm of the Larynx.—The hysterical laryngeal spasm has its characteristics which distinguish it from the spasm of infancy, from the spasm from an irritation of the vagus nerve or of the recurrent, and from the spasm from the introduction of a foreign body into the larynx. This spasm is expiratory or inspiratory. The expiratory spasm is nothing else than the whimsical cough of the hysterical, a symptom common to nearly every hysterical, but a symptom the most painful. In a boy fourteen years of age Thaon has counted as many as twenty-five coughs per minute during weeks. This child was cured by a heavy rain which overtook him during a walk, and to which he was exposed for two hours. At other times the hysterical cough is cured by the intercurrent affection which has been its primary cause. We know the fortunate consequences of the cure of uterine maladies from the hysterical cough. This hysterical cough was the cause of many errors being made before the laryngoscope had unveiled the exact state of the larynx. When it is met with in young girls associated with supplementary hæmoptysis, it gives rise to a prognosis of which the gravity is only apparent.

The laryngeal inspiratory spasm is more rarely met with in hysterics. The varieties are numerous, from a simple modification of the voice to a spasm which puts the subject of it in danger of an imminent death: we even find in medical literature fatal cases, followed by an autopsy. To a very slight degree the voice is more stridulous, or else it is discordant, or as if it were broken; the respiration is a little noisy. Under these conditions the laryngoscopic examination allows us to see the glottis partially closed during inspiration. In a more aggravated degree we can hear varied sounds resembling the crowing of a cock, the barking of a dog; besides, the respiration becomes whistling. At length the spasm becomes so pronounced that the patients present a frightful spectacle and appear threatened with immediate death. It is singular that even in these cases the symptoms of asphyxia

are not so pronounced as in spasms of other origin. Many tracheotomies have been performed in these conditions. Some of them were perhaps justifiable, but the greater number might have been avoided with more sangfroid on the part of the doctor and a better knowledge of the varied resources offered by therapeutics. When danger is imminent, chloroform is the most expeditious means: it unquestionably stops the spasm after a short period of inhalation. A proceeding which has succeeded several times consists in forcibly drawing out the tongue, and even in pushing the finger into the larynx. This procedure probably acts by reflex action rather than in raising the lowered and contracted epiglottis, as Chairou supposed. With a young girl seized with a spasm on arriving at puberty, Thaon has succeeded in stopping the spasm by the aid of ovarian compression.

Laryngeal Hyperæsthesia.—Hysterical laryngeal hyperæsthesia is very common; it is perhaps the most frequent manifestation of hysteria in the larynx. Sometimes it is diffuse, and manifests itself by various sensations,—sensations of burning, tearing, pulling, going from the throat to the sternum, sensations of a foreign body. . . . Laryngeal hyperæsthesia, in place of being diffuse, may be localized in the form of painful points, true neuralgias, more commonly situated to the left side of the neck, and with painful foci which we exasperate by pressure, and which are, in order of frequency, the lateral borders of the thyroid cartilage, the crico-thyroid interspace, the hyo-thyroid interspace, the posterior portion of the tongue behind the lingual V. Another variety of hyperæsthesia is characterized by being afraid to speak,—by *phonophobia*. The patients dread to speak aloud; they whisper. If they speak in a loud voice they are immediately seized with very acute pains. The local therapeutics consist in calming the exaggerated sensibility of the larynx with the aid of topical remedies applied to the mucous membrane, such as the glycerin of morphia, or, better, the application of morphia in the form of powder. For the neuralgic form, hypodermic injections ought to have the preference. We will carefully avoid the abuse of the injections by those patients afflicted with a laryngeal neurosis. Some of them have exhibited remarkable examples of these abuses. The revulsive method also acts with incontestable efficacy: we often succeed with little blisters applied to the sides of the neck. We sometimes stop the spasms, which are accompanied by a slight catarrhal redness of the mucous membrane, by the help of an intra-laryngeal cauterization with a solution of the nitrate of silver.

Laryngeal Anaesthesia.—This anaesthesia is observed less frequently. It is the epiglottis which is most frequently attacked by anaesthesia, and frequently to the exclusion of every other part. The simple introduction of

the mirror is sufficient to cause many of these anæsthesias to disappear. In the more rebellious cases, touching with the sound, the application of an intermittent current, one or several paintings with the nitrate of silver, suffice to set the patients free.

In conclusion, the diagnosis of laryngeal hysteria may almost always be made at the very first, without taking into consideration the train of other symptoms of hysteria, which are very often wanting. This manifestation of hysteria can very frequently be advantageously modified by a well-ordered local treatment, which in this form has a greater importance than the general treatment applied to nervous people.

THE JUICE OF OXALIS ACETOSELLA AS A CAUSTIC.—Dr. Edgar Eltinge, in a paper on this subject (*Annals of Anatomy and Surgery*) giving his personal experience, says,—

"The *Oxalis acetosella*, familiarly known as wood-sorrel, is indigenous both to the United States and Europe, and is abundantly found in shady waste places, groves, and hedges, neglected or uncultivated grounds, unfrequented highways, and mountainous woody regions. It possesses marked caustic or escharotic properties heretofore either unnoticed, untried, or unadmitted by the general profession, although it has formed the essential ingredient of the pastes used by some empirics.

"The expressed inspissated juice of this plant, properly formed into a suitable paste, I have successfully used as a local application in the removal of an epithelioma of the lip occurring in my own person. This had gradually and slowly enlarged, with alternate abrasions and partial healings, until it had become an inflamed, burning, painful, and offensively ulcerating tumor, attended with tumefaction of the sublingual, right parotid, and right tonsillary glands, with copious salivary flow and an inordinate sebaceous secretion which was almost unendurably offensive.

"The best surgical advice recommended excision by the knife, but with an unfavorable prognosis.

"My first trial was had with the zinc chloride paste of Canquoin, with which I had successfully operated several years before upon one whose ability to endure pain was commendable; but when used in my own case it aborted on account of the excessive hemorrhage which its use provoked, a small portion only of the tumor being removed.

"After a delay of two months, no especial good resulting, I was prompted to make a trial of *Oxalis acetosella*. Three successive applications were made, at intervals of twelve hours each, which were sufficient to entirely destroy the growth; the resulting eschar separated on the eighth day, leaving a healthy granulating surface which rapidly healed. Not a drop of blood issued throughout, the contrast in this respect with the effect of the

zinc paste being marked. The glandular tumefaction rapidly subsided, and now, at the end of two years, I still remain free from any signs of recurrence.

"I found the pain produced by the application of this caustic to be intense, demanding all my fortitude to enable me to endure it. The duration, however, did not exceed half an hour after each application,—a period during which it would be quite practicable to maintain general anæsthesia in patients requiring it."

IPECACUANHA IN JAUNDICE.—Dr. Lauder Brunton, in a paper on jaundice read before the late International Medical Congress, spoke of the manner in which Carlsbad water is taken, in small sips, as probably exercising some influence through the mere act of swallowing. He thought it was highly probable that swallowing might remove the effect of the vagus upon the liver, and thus have a beneficial action upon the functions of the liver, and allow, to a certain extent, of the removal of the jaundice. It had been found that when small quantities of water were injected in the liver the secretion from the liver was increased, and also that the pressure under which the bile was secreted was increased. Hence, in all probability, the process of sipping the water in these small quantities, and frequently repeated, had a great deal to do with the remedy. In duodenal catarrh he had got good results from bismuth, perhaps with some magnesia in it. Bismuth had the power of lessening catarrhal inflammation in many mucous surfaces, as in the stomach and the nasal mucous membrane. But when the catarrh was high up the gall-duct they could not expect it to have much effect. What was wanted in that case was something which would be absorbed into the blood and thus act upon the ducts. Such a remedy was ipecacuanha. Professor Rossbach had observed a catarrhal condition in the trachea in the cat, in which it was found to be exceedingly constant; and if he injected ipecacuanha into the veins of the animal, it became at once very much increased, and very much less tenacious. That was exactly what was wanted here,—something which would enter the blood and act upon the secretion of mucus in the bile-ducts, and thus allow the bile to push its way into the duodenum. It had been asked what doses of ipecacuanha were used. He had himself had no experience of the use of ipecacuanha in jaundice. In fact, it was only a month or two since he learned of it, and he had had no cases directly under his treatment since. Dr. Ewart had mentioned that a quarter of a grain to a grain was used in India. It depended upon the nausea. Lately, also, Dr. Hook, of Bombay, recommended it in very large doses in the same way as for dysentery. He gave a sixth of a grain of morphia beforehand, and then thirty grains of ipecacuanha half an hour afterwards as a

bolus; and he had found cases of jaundice improve very satisfactorily in a very short time, and one case in twenty-four hours that had resisted other treatment. The other plan of treatment, as Dr. Ewart had mentioned, was that of continued small doses. Then, in regard to the action of euonymin, he had not tried it in jaundice, but in other cases of intermittent liver disorder in consequence of malaria in men who had been out in India, say three grains of euonymin, made up into a pill, every second or third night, followed by a little Carlsbad water in the morning. Usually he told his patients to take a large draught of the water in the morning after the pill, and on the other mornings the same quantity of the water taken in small sips, as they did at Carlsbad, so that a tumblerful should last them till they had finished dressing, the water to be previously heated to the warmth of warm tea, so that they could comfortably sip it. This combination of euonymin with Carlsbad water gave very good results indeed in these cases of biliary disorder depending upon chronic malarious poison.

A NEW SOLVENT FOR DIPHTHERITIC MEMBRANE.—Dr. W. Hale White writes to the *Lancet* of October 22, giving an account of a case in which, after tracheotomy, glycerin of pepsin was sprayed into the throat by means of an atomizer, the solution being first heated to the active temperature of pepsin (110°). The child recovered.

MISCELLANY.

BREAD REFORM LEAGUE OF ENGLAND.—This association claims that children fed principally on white bread are far more liable to suffer from bad teeth and debilitating diseases of various kinds, their food being deficient in nourishing properties. Wheat-meal bread, it is important to observe, must be carefully distinguished from ordinary brown bread, which is often a mere mixture of coarse bran and inferior white flour. Even if made from the whole of the wheat, ground as is usually done between stones, the meal has an irritating effect, which makes its general use objectionable. But if wheat, after being carefully cleansed from beard, chaff, dirt, etc., be prepared in a fine granular form, according to Dr. Campbell Morfit's process, the irritating effect of ordinary whole-meal is completely remedied. As the outer cuticle contains but little nourishment, the League advises that it be removed by decortication, as that process accomplishes this object without displacing the five interior coats of the bran, which are most valuable. The bread made from such meal is most palatable, very unlike the coarse whole-meal and brown breads usually sold.

The League also objects to bread made with chemical baking-powders, "the products left in the bread being almost always more or

less injurious to health."—*Plumber and Sanitary Engineer*, November 1, 1881.

IN June, 1880, the Winchester Astronomical Observatory of Yale College undertook the verification of thermometers, especially of those used by physicians in medical practice. In the first annual report, lately issued, Dr. Leonard Waldo, astronomer in charge, states that the result has been a great improvement in the accuracy of the instruments submitted for test, four-fifths of all thermometers received in June, 1880, having errors of one-third of a degree, while in April and May, 1881, less than a fifth had errors of the same amount.

THE following title is copied from *La Andalucia Médica* of the 30th of September, 1881. Such is fame:

AUTOPSIA DE MR. GARFIELD

Praticada por el

DOCTOR LONGBRANCH.

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY FROM NOVEMBER 13 TO NOVEMBER 26, 1881.

McKee, J. C., MAJOR AND SURGEON.—The extension of his leave of absence on surgeon's certificate of disability, granted him in S. O. 189, August 18, 1881, from A. G. O., is further extended six months on surgeon's certificate of disability. S. O. 262, A. G. O., November 19, 1881.

McClellan, Ely, MAJOR AND SURGEON.—Having reported in person at these headquarters, will proceed to Fort McHenry, Md., and report to the Commanding Officer for duty. S. O. 204, Department of the East, November 17, 1881.

Carvallo, C., CAPTAIN AND ASSISTANT-SURGEON.—The leave of absence on surgeon's certificate of disability, granted him in S. O. 108, October 24, 1881, Department of the Platte, is extended five months on surgeon's certificate of disability. S. O. 256, A. G. O., November 12, 1881.

Lauderdale, J. F., CAPTAIN AND ASSISTANT-SURGEON.—On discontinuance of McPherson Barracks, Atlanta, Ga., assigned to duty at Jackson Barracks, La.; to remain at McPherson Barracks until medical property for which he is responsible is disposed of. S. O. 124, Department of the South, November 10, 1881.

Byrne, C. B., CAPTAIN AND ASSISTANT-SURGEON.—Temporarily at McPherson Barracks; assigned to duty at Fort Barrancas, Fla. S. O. 124, c. s., Department of the South.

Paulding, H. O., CAPTAIN AND ASSISTANT-SURGEON.—Having reported at these headquarters per S. O. 240, c. s., A. G. O., will report in person to the Commanding Officer, Fort Laramie, W.T., for duty. S. O. 118, Department of the Platte, November 19, 1881.

Cunningham, T. A., CAPTAIN AND ASSISTANT-SURGEON.—Relieved from duty at Jackson Barracks, and assigned to duty at Mt. Vernon Barracks, Ala. S. O. 124, c. s., Department of the South.

Carter, Edward C., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—To report in person to the Commanding General, Military Division of the Pacific and Department of California, for assignment to duty in Department of California. S. O. 263, A. G. O., November 21, 1881.

Raymond, H. J., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—To report in person to the Commanding General, Military Division of the Pacific and Department of California, for assignment to duty in Department of California. S. O. 263, c. s., A. G. O.

Coues, Elliott, CAPTAIN AND ASSISTANT-SURGEON.—His resignation accepted by the President; to take effect this date. S. O. 260, A. G. O., November 17, 1881.